

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance manuals.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Owner will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.

- a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
2. Three (3) paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Owner will return one (1) copy..
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Owner will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Owner will return copy with comments.
1. Correct or revise each manual to comply with Owner comments. Submit copies of each corrected manual within 5 days of Owner comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
1. List of documents.
 2. List of systems.
 3. List of equipment.
 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold **8-1/2-by-11-inch (215-by-280-mm)** paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, **[and]** subject matter of contents[, **and indicate Specification Section number on bottom of spine**]. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on **8-1/2-by-11-inch (215-by-280-mm)** white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.

4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.

- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

- E. **Manufacturers' Data:** Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. **Drawings:** Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."

END OF SECTION 017823

SCOPE OF WORK /RFP

Client	Palm Beach State College	Facility Name	CA/CB Bldg.
Project Name	Elevator Modernization	Facility Address	801 Palm Beach State College Drive Boca Raton, FL 33431
Project No.	PD.15.14.33461.4200	Contact Info	John Hobbs (516) 537-3636 jwh@hobbslaw.us
MF. Division.	04-Masonry	Date / Rev. #	31 March 2016 / 01

Purpose of Scope of Work

Fill the openings in South and West walls of the elevator machine room which are a result of the removal of the exhaust fan mounted in the South wall of the elevator machine room and the louvre mounted in the West wall of the elevator machine room and to provide fire rating integrity for the elevator machine room.

Itemized Scope of Work

1. Remove fan from South Wall and louvre from West wall.
2. Prepare the openings for masonry material.
3. Notify Contact listed above to inspect prepared opening before block is laid to close openings
4. Lay cement block to close openings.
5. Notify Contact listed above to inspect completed work.

Special Instructions

1. Notify Contact listed in Contact Info above to survey Scope of Work.
2. Provide Contact listed in the Contact Info with detailed proposal. Proposal must include
 - a. Itemized cost (Labor & Material).
 - b. Time to complete.
 - c. Do not commence Work until Notice to Proceed or Purchase Order has been issued.
 - d. Contact Info listed above, Project No., Facility Name, Date
 - e. Proposal expiry.





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SECTION 09.65.19.23 RESILIENT TILE FLOORING

PART 1-GENERAL

1.01 Summary

PART 1 - A. Section Includes:

PART 2 - 1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.

PART 3 - B. Related Documents

PART 4 - 1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.

PART 5 - C. Related Sections:

PART 6 - 1. Other Division 9 sections for floor finishes related to this section but not the work of this section

PART 7 - 2. Division 3 Concrete; not the work of this section

PART 8 - 3. Division 6 Wood and Plastics; not the work of this section

PART 9 - 4. Division 7 Thermal and Moisture Protection; not the work of this section

1.02 References

PART 10 - A. Armstrong Technical Manuals

PART 11 - 1. Armstrong Guaranteed Installation Systems manual, F-5061

PART 12 - B. ASTM International:

PART 13 - 1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

PART 14 - 2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

PART 15 - 3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

PART 16 - 4. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring

PART 17 - 5. ASTM F 1700 Standard Specification for Solid Vinyl Tile

PART 18 - 6. ASTM F 1861 Standard Specification for Resilient Wall Base

PART 19 - 7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

PART 20 - 8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

PART 21 - C. National Fire Protection Association (NFPA):

PART 22 - 1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source

PART 23 - 2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials

PART 24 - D. Canadian Standards

PART 25 - 1. CAN/ULC-S102.2 Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies

PART 26 - E. Sustainability Standards

PART 27 - 1. ASTM E1347 - 06(2011) Standard Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

PART 28 - 2. ASTM D5116 - 10 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products and California Department of Public Health (CDPH) Standard Method V1.1-2010

PART 29 - 3. ISO 14001 Environmental management systems -- Requirements with guidance for use

PART 30 - 4. ISO 14021 Environmental labels and declarations-Self-declared environmental claims (Type II environmental labeling)

PART 31 - 5. ISO 14024 Environmental labels and declarations -- Type I environmental labeling -- Principles and procedures

PART 32 - 6. ISO 14025 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures

PART 33 - 7. NSF/ANSI 332: Sustainability Assessment for Resilient Floor Coverings

1.03 System Description

PART 34 - A. Performance Requirements:

PART 35 - Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.

PART 36 - B. Administrative Requirements

PART 37 - 1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

PART 38 - 2. Pre-installation Testing: Conduct pre-installation testing as follows: [Specify testing (i.e. moisture tests, bond test, pH test, etc)]

PART 39 - D. Sequencing and Scheduling

PART 40 - 1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.

PART 41 - 2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 Submittals

PART 42 - A. Tech Data

PART 43 - Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of Armstrong Guaranteed Installation Systems manual, F-5061. for flooring and accessories.

PART 44 - B. Samples

PART 45 - Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.

PART 46 - C. MSDS

PART 47 - Submit Material Safety Data Sheets (MSDS) available for flooring product, adhesives, patching/leveling compounds, floor finishes and cleaning agents.

PART 48 - D. Certifications-1

PART 49 - If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.

PART 50 - E. Closeout

PART 51 - Closeout Submittals: Submit the following:

PART 52 - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

PART 53 - 2. Warranty: Warranty documents specified herein

1.05 Quality Assurance

PART 54 - A. Responsibility

PART 55 - Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

PART 56 - B. Select Installer

PART 57 - Select an installer who is competent in the installation of Armstrong resilient solid vinyl tile flooring.

PART 58 - 1. Engage installers certified as Armstrong Commercial Certified Installers

PART 59 - 2. Confirm installer's certification by requesting their credentials

PART 60 - C. Fire Performance

PART 61 - Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:

PART 62 - 1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I

PART 63 - 2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less

1.06 Delivery, Storage, and Handling

PART 64 - A. Comply-D1

PART 65 - Comply with Division 1 Product Requirements Sections

PART 66 - B. Comply-Manufacturer

PART 67 - Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

PART 68 - C. Deliverability

PART 69 - Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

PART 70 - D. Storage

PART 71 - Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 Project Conditions

PART 72 - A. Temperature

PART 73 - Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of [100°F (38°C)][85°F (29°C)] for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Guaranteed Installations Systems manual, F-5061 for a complete guide on project conditions.

1.08 Warranty

PART 74 - A. Resilient

PART 75 - Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.

PART 76 - B. Warranty Period

PART 77 - Warranty Period: 10 years

PART 78 - C. Rights

PART 79 - The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 80 - D. Validation

PART 81 - For the Warranty to be valid, this product is required to be installed using the appropriate Armstrong Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

Part 2- Products

2.01 Manufacturer

PART 82 - A. Armstrong World Industries.

PART 83 - Resilient tile flooring, wall base, adhesives and accessories:

PART 84 - 1. Armstrong World Industries, Inc., 2500 Columbia Avenue, Lancaster, PA 17603,
<http://www.armstrong.com/commflooringna/>

PART 85 - 2. Manufacturer must have a headquarters in the United States of America

2.02 Resilient Tile Flooring Materials

PART 86 - A. Products

PART 87 - Provide Luxury Solid Vinyl Tile Flooring manufactured by Armstrong World Industries, Inc.

PART 88 - 1. Description: A layered construction consisting of a tough, clear, vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.

PART 89 - 2. Luxury Solid Vinyl Tile shall conform to the requirements of ASTM F 1700, 'Standard Specification for Solid Vinyl Tile', Class III, Type B - Embossed Surface.

PART 90 -

PART 91 -

PART 92 - Natural Creations Mystix - Kinderlloy Copper Verdigris - 24 x 12 x 0.125

2.03 Product Substitution

PART 93 - A. Substitutions

PART 94 - Substitutions: No substitutions permitted because of the specific attributes listed in Section 2.02.

2.04 Wall Base Materials

PART 95 - A. WBA Top Set

PART 96 - For top set wall base: Provide [0.080 in. (2.0 mm)] [1/8 in. (3.2 mm)] thick, [2 1/2 in. (6.35 cm)] [4 in. (10.16 cm)] [6 in. (15.24 cm)] high Armstrong Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, [Type TV - Vinyl, Thermoplastic] [Type TP - Rubber, Thermoplastic], Group 1 - Solid, [Style A - Straight] [Style B - Cove].

2.05 Adhesives

PART 97 - A. Standard Moisture

PART 98 - Provide Armstrong [S-288 Premium Vinyl Flooring Adhesive] [S-240 High-Performance Epoxy Adhesive] under the flooring and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.

PART 99 - B. High Moisture

PART 100 - [For Tile High-Moisture Installation Warranty, Full Spread: Provide Armstrong S-543 Premium Plus Commercial Sheet Flooring Adhesive for field areas and S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].

PART 101 - C. Spray Adhesive Installation Warranty

PART 102 - [For Spray Adhesive High-Moisture Installation Warranty, Full Spread: Provide Armstrong Flip™ Spray Adhesive for field areas and S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].

2.06 Accessories

PART 103 - A. Patching

PART 104 - For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong [S-184 Fast-Setting Cement-Based Patch and Underlayment] [S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive].

PART 105 - B. Sealing

PART 106 - For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.

PART 107 - C. Transition

PART 108 - Provide transition/reducing strips tapered to meet abutting materials.

PART 109 - D. Threshold

PART 110 - Provide threshold of thickness and width so as to accommodate the existing car door sill and not present a tripping hazard.

PART 111 - E. Resilient Edge Strips

PART 112 - Provide resilient edge strips, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by Hobbs & Law from standard colors available.

PART 113 - F. Metal Edge Strips

PART 114 - Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

Part 3 - Execution

3.01 Manufacturer's Instructions

PART 115 - A. Compliance

PART 116 - Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 Examination

PART 117 - A. Site Verification

PART 118 - Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).

PART 119 - B. Visual Inspection

PART 120 - Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.

PART 121 - C. Examine Subfloors

PART 122 - Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

PART 123 - D. Inspect Subfloors

PART 124 - Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

PART 125 - E. Reporting

PART 126 - Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

PART 127 - F. Failure Warning

PART 128 - Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 Preparation

PART 129 - A. Smooth Surfaces

PART 130 - Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong [S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] as recommended by the flooring manufacturer. Refer to Armstrong Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

PART 131 - B. Subfloor Cleaning

PART 132 - Subfloor Cleaning: Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.

Refer to the Armstrong Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

PART 133 - C. Standard Moisture Test

PART 134 - Perform subfloor moisture testing in accordance with [ASTM F 2170, 'Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes'] [ASTM F 1869, 'Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride'] and Bond Tests as described in publication F-5061, "Armstrong Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Relative humidity shall not exceed 80%.][MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained

PART 135 - D. High Moisture Test

PART 136 - [For Tile High-Moisture Installation Warranty, when using S-543 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, 'Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes'] [ASTM F 1869, 'Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride'] and Bond Tests as described in publication F-5061, "Armstrong Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Relative humidity shall not exceed 90%.] [MVER shall not exceed 7 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].

PART 137 - E. High-Moisture Installation Warranty

PART 138 - [For Spray Adhesive High-Moisture Installation Warranty, using Armstrong Flip™ Spray Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, 'Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes' and Bond Tests as described in publication F-5061, "Armstrong Guaranteed Installation System," manual to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 90%. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].

PART 139 - F. pH Test

PART 140 - Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.

PART 141 - G. Wood Subfloor

PART 142 - Wood subfloors: Armstrong resilient floors are recommended on suspended wood subfloors with a 1/4" underlayment (see product installation systems for exceptions) and a minimum of 18" of well-ventilated air space below. Armstrong does not recommend installing resilient flooring on wood subfloors applied directly over concrete or on sleeper-construction subfloors. Loading requirements for subfloors are normally set by various building codes on both local and national

levels. Trade associations such as APA-The Engineered Wood Association provide structural guidelines for meeting various code requirements. Subfloor panels are commonly marked with span ratings showing the maximum center-to-center spacing in inches of supports over which the panels should be placed.

PART 143 - 1. Refer to the Armstrong Guaranteed Installation Systems manual, F-5061 and ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring for additional information.

PART 144 - H. Surface Cleaning

PART 145 - Surface Cleaning: Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.04 Installation of Flooring

PART 146 - A. F5061

PART 147 - Install flooring in strict accordance with the latest edition of Armstrong Guaranteed Installation Systems manual, F-5061. Failure to comply may result in voiding the manufacturer's warranty listed in Section 1.08

PART 148 - B. WalltoWall

PART 149 - Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

PART 150 - C. Pan-type

PART 151 - If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.

PART 152 - D. Scribe

PART 153 - Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.

PART 154 - F. Tools

PART 155 - Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

3.05 Installation of Accessories

PART 156 - A. Top Set

PART 157 - Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.

PART 158 - B. Voids

PART 159 - Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

PART 160 - C. Resilient Edge Strips - Butted

PART 161 - Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

PART 162 - D. Metal Edge Strips

PART 163 - Apply [butt-type] [overlap] metal edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.07 Protection

PART 164 - A. Protection

PART 165 - Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings. (See Finishing The Job in the latest edition of Armstrong Guaranteed Installation Systems manual, F-5061.)

NATURAL CREATIONS®

ArborArt® • EarthCuts® • Mystix®

Luxury Vinyl Tile (LVT)



COMMERCIAL FLOORING

The essence of earth's woods and stones, plus design trends in multiple sizes is displayed in the Natural Creations collection of luxury vinyl tile. It features CONTINUUM™ colors and designs that coordinate with Armstrong REJUVENATIONS™ sheet flooring. The durable, abrasion-resistant wear layer allows for years of good looks while the UV-cured urethane coating may eliminate the need for polishes in some areas. Awarded ADEX Gold for Design Excellence, Natural Creations offers traditional, rustic and exotic wood-looks in ArborArt, natural surface characteristics and color variation in EarthCuts and contemporary design trends in Mystix.

PRODUCT INFORMATION				
Construction	Solid Vinyl Tile [a.k.a. Luxury Vinyl Tile (LVT)]			
Product Line	Natural Creations – ArborArt, EarthCuts, Mystix			
International Product Specifications	ASTM F 1700, Class III, Type B – embossed surface			
Overall Thickness	0.125 in. (3.2 mm)			
Wear Layer Thickness	0.020 in. (0.5 mm)			
Finish	UV-cured Polyurethane			
Installation	Full Spread Adhesives – S-288 Premium, S-543 High-Moisture, S-240 Epoxy			
Maintenance Options	Polish No Polish – Spray Buff/No Buff			
PACKAGING				
Tile Sizes	12 in. x 12 in. (305 mm x 305 mm)	4 in. x 36 in. (102 mm x 914 mm)		
	16 in. x 16 in. (406 mm x 406 mm)	6 in. x 36 in. (152 mm x 914 mm)		
	18 in. x 18 in. (457 mm x 457 mm)	6 in. x 48 in. (152 mm x 1219 mm)		
	12 in. x 24 in. (305 mm x 610 mm)	8 in. x 36 in. (203 mm x 914 mm)		
	18 in. x 36 in. (457 mm x 914 mm)	9 in. x 48 in. (229 mm x 1219 mm)		
Shipping Weight	Contact Techline – www.armstrong.com/commflooringna/flooring-techline.html			
PERFORMANCE	TEST METHOD	MINIMUM REQUIREMENT	PERFORMANCE VS. REQUIREMENT	
ASTM F 1700	Thickness	ASTM F 386	Nominal ± 0.005 in.	Meets
	Size	ASTM F 2055	± 0.016 in. per linear foot	Exceeds
	Squareness	ASTM F 2055	0.010 in. max	Exceeds
	Residual Indentation	ASTM F 1914	Average less than 8%	Exceeds
	Flexibility	ASTM F 137	≤ 1.0 in., no cracks or breaks	Exceeds
	Dimensional Stability	ASTM F 2199	≤ 0.024 in. per linear foot	Exceeds
	Chemical Resistance	ASTM F 925	No more than slight change in surface dulling, attack or staining	Meets or Exceeds
	Resistance to Heat	ASTM F 1514	ΔE ≤ 8	Exceeds
	Resistance to Light	ASTM F 1515	ΔE ≤ 8	Exceeds
Supplementary	Static Load Limit – Subjective Visual	ASTM F 970	No visually apparent indentation	250 psi
	Fire Test Data – Flame Spread	ASTM E 648	0.45 watt/cm ² or more Class I	Meets
	Fire Test Data – Smoke Evolution	ASTM E 662	450 or less	Meets
	Fire Test Data – Canada	CAN/ULC S-102.2	Use dependent	Flame Spread – 90 Smoke Developed – 385
	Certified Low Emitting Product	LEED® EQ4.3	Meets Guidelines	Meets
	Certified Low Emitting Adhesive	LEED EQ4.1	Meets Guidelines	Meets
	Plant Certification	ISO 14001	Meets Certification Guidelines	Certified
	Indoor Air Quality	FloorScore™	Meets Certification Guidelines	Certified
	Indoor Air Quality	CHPS 01350	Meets Certification Guidelines	Certified
NSF/ANSI 332	Sustainability Assessment	Meets Certification Guidelines	Gold Level Certified	
WARRANTY				
10-Year Commercial Warranty when installed in accordance with Armstrong's Guaranteed Installation Systems manual, F-5061.				
LINKS				
Installation Instructions – www.armstrong.com/pdbupimages/194605.pdf				
Maintenance Information – www.armstrong.com/pdbupimages/197965.pdf				
View the full line – www.armstrong.com/commflooringna/products/lvt				
Email Techline – www.armstrong.com/commflooringna/contact_techline.jsp				

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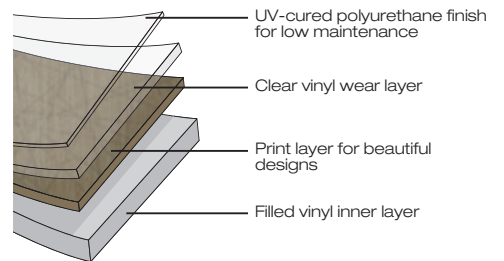
Luxury Vinyl Tile (LVT)



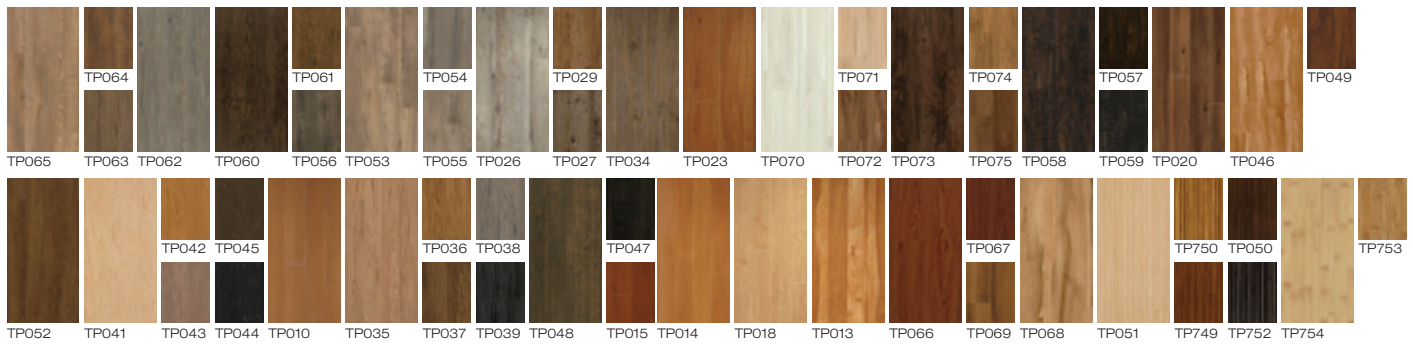
COMMERCIAL FLOORING

Sustainability Facts

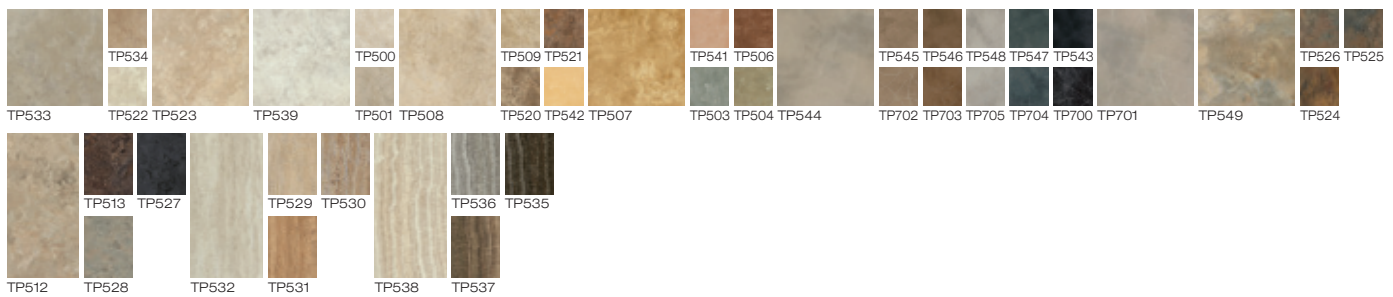
Serving LVT	As Served
Certified to meet LEED® EQ Credit: Low Emitting Interiors	✓
Adhesives	
Certified to meet LEED® EQ Credit: Low Emitting Interiors	✓
FloorScore™ Certified to CDPH Standard Method V1.1-2010	✓
Collaborative for High Performance Schools CHPS-IEQ2.2 & LABS-21 IEQ4.3	✓
ISO 14001 Plant Certification	✓
U.S. Green Building Council Member	✓
Canada Green Building Council Member	✓
NSF/ANSI 332 Gold Level Certified	✓
Low Maintenance Option	✓



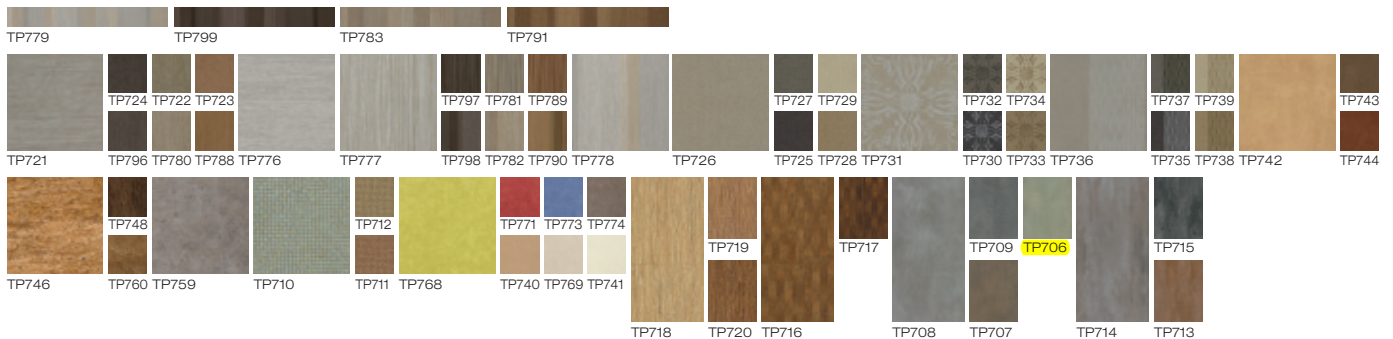
ArborArt



EarthCuts



Mystix



SECTION 142400 - HYDRAULIC ELEVATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the modernization of an existing Direct Acting Plunger Hydraulic Passenger Elevator.
- B. Related Sections include the following:
1. Division 04 Section "Unit Masonry" for setting sleeves, inserts, and anchoring devices in masonry.
 2. Division 05 Section "Structural Steel Framing" for the following:
 - a. Attachment plates, angle brackets, and other preparation of structural steel.
 3. Division 05 Section "Metal Fabrications" for the following:
 - a. Attachment plates and angle brackets for support.
 - b. Pit ladders.
 - c. Cants in hoistways made from steel sheet.
 4. Division 05 Section "Decorative Metal" for combination units that contain hall push-button stations.
 5. Division 09 Section for finish flooring in elevator cars.
 6. Division 09 painting Sections for field painting of hoistway entrance doors and frames.
 7. Division 26 Sections for electrical service for elevators to and including disconnect switches at machine room door.
 8. Division 27 Section "Communications Horizontal Cabling" for telephone service for elevators.
 9. Division 28 Section "Access Control" for security access system equipment used to restrict elevator use.
 10. Division 28 Section "Fire Detection and Alarm" for smoke detectors in elevator lobbies to initiate emergency recall operation and for connection to elevator controllers.
- C. Allowances: No Allowances.
- D. Unit Prices: No Unit Prices.

1.3 DEFINITIONS

- A. Definitions in ASME A17.1 apply to work of this Section.
- B. Defective Elevator Work: Operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

1.4 SUBMITTALS

- A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for the following:
 - 1. Operation, control, and signal systems.
 - 2. Control Valve.
 - 3. Rupture Valve
 - 4. Car Door Operator and related equipment.
 - 5. Landing Door track, roller and closure assemblies and related equipment
 - 6. Landing Door Interlock assemblies
 - 7. Car and Landing Fixtures and Signal devices.
 - 8. Hydraulic Oil
 - 9. Hydraulic Pump
 - 10. Car Guides
- B. Shop Drawings: Show plans, elevations, sections, and large-scale details and locations of equipment and signals. Include large-scale layout of car control station and swing return. Indicate variations from specified requirements, maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands. Provide shop drawings for the following:
 - 1. Car Control Station
 - 2. Hall pushbutton stations
 - 3. Car and hall fixtures
 - 4. Door operator
 - 5. All hoistway and car door equipment
- C. Samples for Initial Selection: For finishes involving color and metal surface selection.
- D. Samples for Verification: For exposed finishes signal equipment; 3-inch- (75-mm-) square Samples of sheet materials; and 4-inch (100-mm) lengths of running trim members.
- E. Manufacturer Certificates: Signed by elevator manufacturer certifying that all equipment specified and to be provided adequate, compliant and meet performance criteria.
- F. Qualification Data: For Installer.

- G. Operation and Maintenance Data: For elevators to include emergency and normal operation, and maintenance manuals.
 - 1. In addition to items specified in Division 01 Section "Operation and Maintenance Data," (Attached hereto) include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.
- H. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.
- I. Warranty: Special warranty specified in this Section.
- J. Continuing Maintenance Proposal: Service agreement specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Elevator manufacturer or manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: American Made.
 - 1. All components provided and installed must be manufactured in the United States of America by a manufacture domiciled in one of the 50 State Jurisdictions.
- C. Regulatory Requirements:
 - 1. Comply with the edition of ASME A17.1 and ASME 17.3 governing the installation and modernization and repairs of elevators at the time of permitting.
 - 2. Comply with all State and Local codes and administrative rules governing the installation and modernization and repairs of elevators at the time of permitting.
 - 3. Comply with all requirements of the State of Florida Educational Institution.
 - 4. Comply with all requirements of PBSC Building Authority.
 - 5. Comply with all provisions and instruction of the Elevator Industry Safety Manual.
 - 6. Comply with all requirements, policies and procedures of PBSC.
- D. Accessibility Requirements: Comply with Section 4.10 in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)." 407 in ICC A117.1.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials, components and equipment in manufacturer's protective packaging.
- B. Store materials, components, and equipment off of ground, under cover, and in a dry location. Handle according to manufacturer's written recommendations to prevent damage, deterioration, or soiling and according to Palm Beach State College policies and procedures.

1.7 COORDINATION

- A. Coordinate installation of sleeves, block outs, and items that are embedded in concrete or masonry for elevator equipment. Furnish templates and installation instructions and deliver to Project site in time for installation.
- B. Coordinate sequence of elevator installation with other work to avoid delaying the Work.
- C. Coordinate locations and dimensions of other work relating to hydraulic elevators including pit ladders, sumps, and floor drains in pits; entrance subsills; and electrical service, electrical outlets, lights, and switches in pits and machine rooms.

1.8 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair, restore, or replace defective elevator work within specified warranty period.
 - 1. Warranty Period: One year from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide **one year** full maintenance service by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
 - 1. Perform maintenance, including emergency callback service, during normal working hours.
 - 2. Include 24-hour-per-day, 7-day-per-week emergency callback service.
 - a. Response Time: Two hours or less.
- B. Continuing Maintenance Proposal: Provide a continuing maintenance proposal from Installer to Owner, in the form of a standard two-year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. KONE Inc.
 2. Otis Elevator Co.
 3. Schindler Elevator Corp.
 4. ThyssenKrupp Elevator.
 5. GAL Corporation
 6. Maxton
 7. EECO
 8. Elevator Controls
 9. Motion Controls
 10. SmartRise Controls
 11. Wurtec
 12. Others approved by owner.

2.2 MODERNIZATION OF SYSTEMS AND COMPONENTS

- A. General: Provide manufacturer's standard elevator systems. Where components are not otherwise indicated, provide standard components published by manufacturer as included in standard pre-engineered elevator systems and as required for complete system an approved by the Owner.
- B. Pump Units: Positive-displacement type with a maximum of 10 percent variation between no load and full load and with minimum pulsations. Provide the following:
1. Submersible pump, with submersible squirrel-cage induction motor, suspended inside oil tank from vibration isolation mounts.
 2. Provide motor with solid-state starting.
- C. Hydraulic Silencers: Provide hydraulic silencer containing pulsation-absorbing material in a blowout-proof housing at pump unit.
- D. Piping: Provide size, type, and weight piping recommended by manufacturer, and provide flexible connectors to minimize sound and vibration transmissions from power unit.
- E. Hydraulic Fluid: Nontoxic, readily biodegradable fire-resistant fluid made from vegetable oil with antioxidant, anticorrosive, antifoaming, and metal-passivating additives. Hydraulic fluid is approved by elevator manufacturer for use with elevator equipment.
1. Product: Subject to compliance with requirements, provide "Hydro Safe" by Hydro Safe Oil Division, Inc.
- F. Car Frame and Platform: Re-use existing equipment
- G. Guides: Provide new sliding guides inserts at top and bottom of car.

- H. Guide Rails and Brackets: Clean, plumb, align and tighten existing Guide Rails and Brackets.

2.3 OPERATION SYSTEMS

- A. General: Provide manufacturer's standard microprocessor operation system as required to provide type of operation system indicated.
- B. Single-Car Auxiliary Operations: In addition to primary operation system features, provide the following operational features for elevators where indicated:
1. Battery-Powered Lowering: When power fails, car is lowered to the lowest floor, opens its doors, and shuts down. System includes rechargeable battery and automatic recharging system.
 2. Independent Service: Key switch in car control station removes car from group operation and allows it to respond only to car calls. Key cannot be removed from keyswitch when car is in independent service. When in independent service, doors close only in response to door close button.
- C. Security Features: None

2.4 DOOR REOPENING DEVICES

- A. Infrared Array: Provide door reopening devices with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more of the light beams shall cause doors to stop and reopen.
- B. Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.

2.5 FINISH MATERIALS

- A. General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated.
- B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.
- C. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.
- D. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.
1. Textured Stainless-Steel Sheet: Product with texture rolled into exposed surface.

2.6 CAR ENCLOSURES

1. General: Elevator Cab will be re-furbish under separate contract.

2.7 HOISTWAY ENTRANCES

- A. General: Existing sills, strut angles, headers and frames will be re-used except on first floor where the strut angles are to be replaced to eliminate rust on existing angles cause by water intrusion. Furnish and Install new tracks, hanger roller assemblies, pick-up roller assemblies, interlocks and relating cables, closers, and sight guards
- B. Materials and Fabrication: Provide manufacturer's standards, but not less than the following:
 - 1. Sight Guards: Provide sight guards on doors matching door edges.

2.8 SIGNAL EQUIPMENT

- A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements with LEDs.
- B. Car Control Stations: Provide approved standard semi-recessed car control stations. Mount in return panel adjacent to car door, unless otherwise indicated.
 - 1. Mark buttons and switches with standard identification for required use or function that complies with ASME A17.1. Use both tactile symbols and Braille.
 - 2. Provide "No Smoking" sign matching car control station, either integral with car control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.
- C. Emergency Communication System: Provide system that complies with ASME A17.1 and the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)." On activation, system dials preprogrammed number of monitoring station and identifies elevator location to monitoring station. System provides two-way voice communication without using a handset and provides visible signals that indicate when system has been activated and when monitoring station has responded. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.
- D. Firefighters' Two-Way Telephone Communication Service: Provide in each car and required conductors in traveling cable for firefighters' two-way telephone communication service specified in Division 28 Section "Fire Detection and Alarm."
- E. Car Position Indicator: Furnish and Install digital-type car position indicator, located above car door or above or integral to the car control station. Also provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served.
 - 1. Include travel direction arrows if not provided in car control station.
- F. Hall Push-Button Stations: Provide hall push-button stations at each landing as indicated.

1. Provide manufacturer's standard wall-mounted units.
 2. Provide units with flat faceplate for mounting with body of unit recessed in wall.
 3. Equip units with LED lighted buttons for calling elevator and for indicating desired direction of travel.
 4. Provide telephone jack in each unit for firefighters' two-way telephone communication service specified in Division 28 Section "Fire Detection and Alarm."
- G. Hall Lanterns: Units with LED arrows; but provide single arrow at terminal landings. Provide the following:
1. Units with flat faceplate for mounting with body of unit recessed in wall and with illuminated elements projecting from faceplate for ease of angular viewing.
- H. Hall Annunciator: With each hall lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.
1. At manufacturer's option, audible signals may be placed on car.
- I. Hall Position Indicators: Provide digital-display-type position indicators, located above hoistway entrance at ground floor. Provide units with flat faceplate for mounting and with body of unit recessed in wall.
1. Integrate ground-floor hall lanterns with hall position indicators.
- J. Corridor Call Station Pictograph Signs: Provide signs matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station, unless otherwise indicated.

2.9 ELEVATORS

A. Elevator Description:

1. Type: Under-the-car (Direct-Acting) single cylinder.
2. Rated Load: 2500 lb
3. Rated Speed: 100 fpm
4. Operation System: Collective automatic operation.
5. Auxiliary Operations:
 - a. Battery-powered lowering.
 - b. Independent service
6. Security Features: None
7. Car Enclosures: Existing Car Enclosure to be re-used.
8. Hoistway Entrances:
 - a. Entrances: Existing Hoistway Entrances are to be re-used.
 - b. Doors: Existing Door Panels are to be re-used.

- c. Sills: Existing Door Sill are to be re-used except 1st floor.
9. Hall Fixtures: Furnish and Install new hall fixtures as noted in the Products Section.
10. Additional Requirements:
- a. Provide inspection certificate, mounted under acrylic cover with frame made from polished stainless steel match cab return finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Verify critical dimensions and examine supporting structure and other conditions under which elevator work is to be installed.
 - 1. For the record, prepare a written report, endorsed by Installer, listing dimensional discrepancies and conditions detrimental to performance or indicating that dimensions and conditions were found to be satisfactory.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.
- B. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts designed to effectively prevent transmission of vibrations to structure and thereby eliminate sources of structure-borne noise from elevator system.
- C. Install piping above the floor, where possible. Where not possible, install underground piping in Schedule 40 PVC pipe casing assembled with solvent-cemented fittings.
- D. Install piping above the floor, where possible. Where not possible, cover underground piping with permanent protective wrapping before backfilling.
- E. Lubricate operating parts of systems as recommended by manufacturers.
- F. Alignment: Reduce clearances to minimum, safe, workable dimension at throughout the travel and overtravel.
- G. Leveling Tolerance: **1/4 inch (6 mm)**, up or down, regardless of load, oil temperature and direction of travel.

H. Locate hall signal equipment for elevators as follows, unless otherwise indicated:

1. Place hall lanterns either above or beside each hoistway entrance.
2. Mount hall lanterns at a minimum of **72 inches (1829 mm)** above finished floor.

3.3 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of elevator installation and before permitting use (either temporary or permanent) of elevators, perform acceptance tests as required and recommended by ASME A17.1 and by governing regulations and agencies.
- B. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times tests are to be performed on elevators.

3.4 PROTECTION

- A. Temporary Use: Comply with the following requirements for used for construction purposes (including elevator contractor):
 1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
 2. Provide strippable protective film on entrance and car doors and frames.
 3. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
 4. Do not load elevators beyond their rated weight capacity.
 5. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as necessary for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
 6. Restore damage, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate elevator.
- B. Check operation of elevator with Owner's personnel present and before date of Substantial Completion. Determine that operation systems and devices are functioning properly.
- C. Check operation of elevator with Owner's personnel present not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

END OF SECTION 142400

SCOPE OF WORK /RFP

Client	Palm Beach State College	Facility Name	CA/CB Bldg.
Project Name	Elevator Modernization	Facility Address	801 Palm Beach State College Drive Boca Raton, FL 33431
Project No.	PD.15.14.33461.4200	Contact Info	John Hobbs (516) 537-3636 jwh@hobbslaw.us
MF. Division.	09-Finishes/09.65.19.00-Flooring- 05-Decorative Metals 26-Lighting	Date / Rev. #	31 March 2016 / 01 27 April 2016 / 02

Purpose of Scope of Work

Provide updated and code compliant cab interior materials and improve cab esthetics.

Itemized Scope of Work

1. Remove existing floor.
2. See attached CSI Division 09 Specifications for elevator cab floors.
3. Clad existing stainless steel returns, transoms, and car door(s).
4. Furnish and Install new reveals, frieze, handrails.
5. Provide concealed cab ventilation in accordance with ASME/ANSI A17.1
6. Coordinate cladding return in which the car operation panel is located with the elevator contractor.
7. Furnish and Install new cab lighting consisting of 6 LED Downlight Fixtures with black trim in the suspended ceiling.

Special Instructions

1. Notify Contact listed in Contact Info above to survey Scope of Work.
2. Provide Contact listed in the Contact Info with detailed proposal. Proposal must include
 - a. Itemized cost (Labor & Material).
 - b. Time to complete.
 - c. Do not commence Work until Notice to Proceed or Purchase Order has been issued.
 - d. Contact Info listed above, Project No., Facility Name, Date
 - e. Proposal expiry.



SCOPE OF WORK /RFP

Client	Palm Beach State College	Facility Name	CA/CB Bldg.
Project Name	Elevator Modernization	Facility Address	801 Palm Beach State College Drive Boca Raton, FL 33431
Project No.	PD.15.14.33461.4200	Contact Info	John Hobbs (516) 537-3636 jwh@hobbslaw.us
MF. Division.	26-Electrical	Date / Rev. #	31 March 2016 / 01 27 April 2016 / 02

Purpose of Scope of Work

Provide updated electrical and fire/life safety alarm/ monitoring in compliance governing authority for the elevator modernization.

Itemized Scope of Work

1. Replace smoke detector mounted above machine room door.
2. Furnish and Install new smoke detector over pumping unit oil reservoir.
3. Furnish and Install GFI 115vac receptacles (2) in elevator pit.
4. Furnish and Install new GFI 115vac duplex receptacle in machine room.
5. Remove rheostat control and power supply for fan.
6. Provide fire alarm inter-connection to elevator controller.
7. Notify Contact listed above to inspect completed work.

Special Instructions

1. Notify Contact listed in Contact Info above to survey Scope of Work.
2. Provide Contact listed in the Contact Info with detailed proposal. Proposal must include
 - a. Itemized cost (Labor & Material).
 - b. Time to complete.
 - c. Do not commence Work until Notice to Proceed or Purchase Order has been issued.
 - d. Contact Info listed above, Project No., Facility Name, Date
 - e. Proposal expiry.

Scope of Work/RFP--Electrical





Existing 115vac outlet to sump pump



Existing 115vac work outlet on East wall of elevator pit.
Scope of Work/RFP--Electrical



Existing 115vac outlet and switch in machine room
Existing fan control

Scope of Work/RFP--Electrical



Existing smoke detector over machine room door.