

SECTION 01 73 00**OPERATION AND MAINTENANCE DATA****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes: Administrative and procedural requirements the preparation and submittal for operating and maintenance manuals including the following:
 - 1. Operating and maintenance manuals for building systems or equipment.
 - 2. Instruction manual covering the care, preservation and maintenance of architectural products and finishes.
 - 3. Instruction of Owner's operating personnel in operation and maintenance of building systems and equipment.

1.2 FORM OF SUBMITTALS

- A. Prepare instructional manuals and data bound in commercial quality 3-ring binders:
 - 1. Organize with index tabs according to sequence of Specification Sections.
 - 2. Identify each volume with type or printed title as instructed by Architect.

1.3 CONTENT OF MANUALS

- A. Arrange typewritten table of contents for each volume, in systematic order:
 - 1. List of each product required to be included with name, address, and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Local source of supply for parts and replacement.
 - 2. Identifying each product by product name and other identifying symbols.
- B. Product Data:
 - 1. Include only those sheets which are pertinent to specific product with product clearly identified.
 - 2. Delete references to inapplicable information.
 - 3. Annotate each sheet to clearly identify specific product or part installed, and data applicable to installation.
- C. Drawings:
 - 1. Supplement product data with drawings as necessary to clearly illustrate relations of component parts of equipment and systems and control and flow diagrams.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
- D. Written Text: As required to supplement product data for particular installation to provide logical sequence of instructions for each procedure, organized in a consistent format and in logical sequence of instructions for each procedure.
- E. Recommended Spare Parts: Furnish a list of recommended spare parts for each equipment item that will be needed to support that item of equipment for a 12 month period. Spare parts list shall contain the following information:
 1. Parts Descriptions.
 2. Manufacturer's Part Number.
 3. Shelf Life.
 4. Recommended Quantity.
 5. Unit Price.
 6. Name and address of the part manufacturer.
 7. Name and address of a local supplier for the part.

1.4 EQUIPMENT AND SYSTEMS MANUAL REQUIREMENTS

- A. Submit three copies of completed manuals in final form.
- B. Content, for each unit of equipment and system, as appropriate:
 1. Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Operating procedures:
 - a. Start-up, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shutdown and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 3. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.
 4. Servicing and lubrication schedule, including list of lubricants required.
 5. Manufacturer's printed operating and maintenance instructions.
 6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, price lists, illustrations, assembly drawings and diagrams required for maintenance, predicted life of parts subject to wear and items recommended to be stocked as spare parts.
 8. As-installed control diagrams by controls manufacturer.
 9. Each subcontractor's coordination drawings including as-installed color coded piping diagrams.
 10. Charts of valve tag numbers, with location and function of each valve.
 11. Water treatment procedures and tests.
 12. Final balancing reports for mechanical systems.
 13. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 14. Other data as required under pertinent sections of specifications.
- C. Content, for each electric and electronic system, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories of panelboards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. As-installed color coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.
 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 8. Other data as required under pertinent sections of specifications.
- D. Include warnings of detrimental maintenance practices.
- E. Prepare and include additional data when need for such data becomes apparent during instruction of Owner's personnel or as required under pertinent Specification Section.

- F. Refer to individual Sections of Project Manual for additional requirements for operating and maintenance data.
- G. Provide complete information for products and equipment specified in:
 - 1. Division 22: Plumbing Systems.
 - 2. Division 23: Mechanical Systems.
 - 3. Division 26: Electrical Systems.

1.5 ARCHITECTURAL PRODUCTS MANUAL REQUIREMENTS

- A. Submit three copies of complete manual in final form.
- B. Refer to individual Sections of Project Manual for submittal requirements.
- C. Content: Manufacturer's data, giving full information on products, catalog numbers, sizes, and composition; and finish designations.
- D. Information required for re-ordering.
- E. Instructions for care and maintenance.
 - 1. Manufacturer's recommended lubricants.
 - 2. Manufacturer's recommendations for types of cleaning agents and methods.
 - 3. Cautions against cleaning agents and methods which are detrimental to product.
 - 4. Recommended maintenance and cleaning schedule.
- F. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

1.6 SUBMITTAL SCHEDULE

- A. Submit one copy of completed data in final form 30 days prior to demonstrations of equipment.
- B. Copy will be returned approved or with comments for revisions.
- C. Submit specified number of copies of approved data in final form within 10 days prior to equipment demonstrations and prior to final inspection or acceptance.

1.7 INSTRUCTIONS OF OWNER'S PERSONNEL

- A. Prior to final inspection, instruct the Owner's personnel in operation, adjustment, and maintenance of products equipment and systems. Provide instruction at mutually agreed upon times.
 - 1. For equipment that requires seasonal operation, provide similar instruction during other seasons.

2. Use operation and maintenance manuals for each piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION