

## **SECTION 115123 – LIBRARY STACK SYSTEMS – CANTILEVER (LIBRARY BOOKSTACK) SHELVING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section includes the following:  
Cantilever bracket type metal library bookstack shelving as defined by the American Library Association and published in their Library Technology Reports
- B. Related Work, Not Furnished:  
Finish floor covering materials and installation.
- C. Related Sections:  
[Sections in Division 9 – Finishes, relating to finish floor and base materials.]
- D. Allowances:
- E. Alternates:

#### **1.3 REFERENCES**

- A. American Library Association (ALA) Standards:  
Applicable standards for Cantilever Bracket Type Metal Library Bookstack; Library Technology Reports.
- B. American National Standards Institute (ANSI) Standards:  
Applicable standards for fasteners used for assembly.
- C. American Society for Testing and Materials (ASTM) Standards:  
Applicable standards for steel sheet materials used for fabrication.
- D. American Institute Of Steel Construction (AISC) Standards:  
Applicable standards for steel materials used for fabrication.

#### **1.4 DESCRIPTION**

- A. General: Cantilever Bracket Type Metal Library Bookstack as defined by the American Library Association and published in their Library Technology Reports.
- B. Finishes:

Fabricated Metal Components and Assemblies: All components to be painted with an electrostatically applied Powder Coat paint that meets or exceeds specifications set forth by the American Library Association for Cantilever Bracket Type Metal Library Bookstacks published in their Library Technology Reports.

Fabricated Laminate Components and Assemblies: Manufacturer's standard low-pressure or high-pressure laminate finishes.

C. Sizes:

Available in heights of [42] [66] [78] [84] [90] inches ([1066MM] [1676MM] [1981MM] [2133MM] [2286MM]) as noted on drawings (variable in 1 inch (25MM) increments as required).

Available in nominal widths of [36] [24] [30] inches ([914MM] [609MM] [762MM]) as noted on drawings.

Available in nominal single-faced depths of [8] [9] [10] [12] inches ([203MM] [228MM] [254MM] [304MM]) as noted on drawings.

Available in double-faced depths of [16] [18] [20] [24] inches ([406MM] [457MM] [508MM] [609MM]) as noted on drawings.

1.5 PERFORMANCE REQUIREMENTS

A. Design Requirements:

Limit overall width to [ ] inches [ ] MM.

Limit overall depth to [ ] inches [ ] MM.

Limit overall height to [ ] inches [ ] MM.

B. [Seismic Performance: Provide library bookstacks capable of withstanding the effects of earthquake movement when required by applicable building codes.]

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's product literature and installation instructions for each type of library bookstack required. Include data substantiating that products to be furnished comply with requirements of the contract documents.

B. Shop Drawings: Show fabrication, assembly, and installation details including descriptions of procedures and diagrams. Show complete extent of library bookstack installation layout including quantities, locations and types of accessory units required. Include notations and descriptions of all installation items and components.

Show installation details at non-standard conditions, if any.

Provide layout, dimensions, and identification of each unit corresponding to sequence of installation and erection procedures.

Provide installation schedule and complete erection procedures to ensure proper installation.

C. Samples: Provide minimum 3 inch (76MM) square example of each color and texture on actual substrate for each component to remain exposed after installation.

- D. Selection Samples: For initial selection of colors and textures, submit manufacturer's color charts consisting of actual product pieces, showing full range of colors and textures available.
- E. Warranty: Submit draft copy of proposed warranty for review by the [Architect] [Architect/Engineer] [Engineer] [Designer].
- F. Maintenance Data: Provide in form suitable for inclusion in maintenance manuals for library bookstack shelving. Data shall include operating and maintenance instructions, parts inventory listing, purchase source listing, emergency instructions, and similar information.  
Submit manufacturer's instructions for proper maintenance materials and procedures.  
Submit manufacturer's printed instructions for maintenance of installed work, including methods and frequency recommended for maintaining optimum condition under anticipated use conditions. Include precautions against using materials and methods, which may be detrimental to finishes and performance.
- G. [Reference List: Provide a list of recently installed library bookstacks to be visited by owner, architect, and contractor. Intent of list is to aid in verifying the suitability of manufacturer's products and comparison with materials and product specified in this section.]

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Engage an experienced manufacturer who is ISO 9001 certified for the design, production, installation and service of library bookstacks. Furnish manufacturer's certification attesting ISO 9001 quality system registration.
- B. Installer Qualifications: Engage an experienced installer who is a manufacturer's authorized representative for the specified products for installing library bookstacks.  
Minimum Qualifications: 1-year experience installing library bookstacks of comparable size and complexity to specified project requirements.

#### 1.8 DELIVERY, STORAGE AND HANDLING

- A. Follow manufacturer's instructions and recommendations for delivery, storage and handling requirements.

#### 1.9 PROJECT CONDITIONS

- A. Field Measurements: Verify quantities of library bookstack units before fabrication. Indicate verified measurements on Shop Drawings. Coordinate fabrication and delivery to ensure no delay in progress of the Work.
- B. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating library bookstack units without field measurements. Coordinate construction to ensure actual dimensions correspond to established dimensions.

#### 1.10 [SEQUENCING AND SCHEDULING

- A. Sequence library bookstack units [with other work] to minimize possibility of damage and soiling during remainder of construction period.

- B. Schedule installation of specified library bookstack shelving after finishing operations; including painting have been completed.
- C. Provide components, which must be built in at a time, which causes no delays general progress of the Work.
- D. Pre-installation Conference: Schedule and conduct conference on project site to review methods and procedures for installing library bookstack units including, but not limited to, the following:  
Recommended attendees include:
  - 1. Owner's Representative.
  - 2. Prime Contractor or representative.
  - 3. The [Architect] [Architect/Engineer] [Engineer/Architect] [Engineer] [Designer].
  - 4. Manufacturer's representative.
  - 5. Subcontractors or installers whose work may affect, or be affected by, the work of this section.]

#### 1.11 WARRANTY

- A. Provide a written warranty, executed by Contractor, Installer, and Manufacturer, agreeing to repair or replace units, which fail in materials or workmanship within the established warranty period. This warranty shall be in addition to, and not a limitation of, other rights the Owner may have under General Conditions provisions of the Contract Documents.
- B. Limited Lifetime Warranty: Subject to the terms in the written warranty, warrant the original purchaser exclusively that the shelving manufactured by it will be free from defects in materials and workmanship for the lifetime of the shelving.

#### 1.12 [MAINTENANCE]

- A. [Provide manufacturer's extended maintenance agreement for [\_\_\_\_\_] [years] [months], commencing on the day the standard maintenance warranty ends.]

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. General: Products are based upon library bookstack shelving manufactured by Spacesaver Corporation.

#### 2.2 BASIC MATERIALS

- A. General: Provide materials and quality of workmanship, which meets or exceeds established industry standards for products specified. Use furniture grade sheet metal, wood panels, plastic laminate and fasteners for component fabrication unless indicated otherwise. Material thicknesses/gauges are manufacturer's option unless indicated otherwise.

## 2.3 MANUFACTURED COMPONENTS

### A. Welded Frame Upright:

1. The welded frame shall consist of 2 vertical upright columns constructed of min. 14-gauge (1.9MM) steel. Upright column shall be 2" (51MM) deep with a 1 1/4" face with 1/2" (13MM) return flanges. The uprights are fully welded to a tubular top spreader and a channel bottom spreader. The uprights shall have shelf attachment slots on 1" (25MM) increments the entire length of the upright. Slots shall be 5/8" x 1/4" (16MM x 6MM). Uprights shall include location indicators the entire length of upright on a minimum of 6" (152MM) centers.
2. The tubular top spreader shall be a minimum of 14-gauge (1.9MM) steel tube 2 1/2" tall x 1" wide (64MM tall x 25MM wide).
3. The bottom spreader channel shall be a 16-gauge (1.5MM) channel 1-3/4" tall x 1" wide (44MM tall x 25MM wide) with two 1/2" (12MM) square holes provided for cage nuts for use with optional levelers.

Non-welded frame cantilever type shelving units are unacceptable.

### B. Base supports:

1. A base support shall be provided to provide lateral unit stability. The support shall be minimum of 14-gauge (1.9MM) steel 9" (228MM) high with a 1" (25MM) return on the bottom for support. Support shall attach to frame upright with two 3/8" (10MM) – 16 UNC bolts and 3/8" (10MM) keps nuts. Support shall be designed and constructed with shear tabs that interlock/mate with the upright to provide a positive connection that will give additional stability to welded frame in addition to the bolted connectors. Shear tabs ensure squareness and alignment of the base support to the welded frame. Base support design must allow the frame to transfer loads to floor or levelers. Base support brackets that put the bolted connection in shear are unacceptable.
2. [A gusseted base support shall be provided between every unit on mobile to provide lateral unit stability. The gusset will be a minimum 14-gauge (1.9MM) steel welded to the top of the standard base support.]

### C. Leveler Kits:

1. Single-Faced: Consists of one or two 3/8 (10MM) -16 UNC cage nut(s) and leveler(s) held by the single faced base support. Two additional cage nuts and levelers are provided to be used in the welded frame itself.
2. Double-Faced: Consists of two or four 3/8 (10MM) -16 UNC cage nuts and levelers held by the double-faced base support. Two additional cage nuts and levelers are provided to be used in the welded frame itself.

### D. Shelf end brackets:

1. Shall be made of minimum 16-gauge (1.5MM) steel of a depth not less than that of the shelf on which they are used and shall extend not less than 6" (152MM) above the top surface of the shelf. The top and front edges shall be flanged outwardly to a half round profile to prevent accidental knifing of material. Shelf brackets shall have a minimum of two hooks at the top for engaging into the column (post) and one safety

lug to prevent accidental dislodgment at the bottom. Outward embossment in the upper front corner of the shelf brackets shall act as shelf spacers and prevent overlapping of shelf end brackets. For aesthetic reasons as well as to prevent sharp corners, the upper front corner of the shelf brackets shall have a radius of not less than 1 inch (25MM). The base of the end brackets will have two lanced tabs that interlock with the shelf and provide firm support for the shelf. Lance tabs and shelf shall be provided with 1/4" (64MM) diameter holes for optional bolting of components. The front edge of the end bracket shall have a 15-degree slope.

E. Base Shelves for Static:

1. Shelves shall be formed from minimum 18-gauge (1.2MM) cold rolled steel with a triple 90-degree bend on the rear of shelf and a double bend with a 3" (76MM) surface at the front. Shelf ends to be turned down 90-degrees to engage and interlock into the shelf end brackets.
2. Base shelves on mobile shall be 3/4" (19MM) to sit flush with top of carriage profile. Base shelves shall be individual on both faces of double face or single face units, with center filler channels. Each base shelf shall be supported by shelf end brackets for maximum strength and support.

F. Plain Shelves:

1. Shelves shall be formed from minimum 18-gauge (1.2MM) cold rolled steel with a triple 90-degree bend on both front and rear edges with a shelf thickness to be 3/4" (19MM). Shelf ends to be turned down 90-degrees to engage and interlock into the shelf end brackets. Shelves shall be no less than 1/4" (6MM) from actual dimension specified.

G. Metal canopy tops:

1. Shall be formed from minimum 18-gauge (1.2MM) cold rolled steel with a triple 90-degree bend on front edges with a maximum edge thickness of 3/4" (19MM). Single face and double face units to be one-piece design.

H. Card Holders:

1. As specified, shall be painted steel to hold 3" x 5" (76MM x 127MM) cards (by others). One shall be provided for each single faced and two for each double faced end panel.

All parts of identical dimensions shall be totally interchangeable without modification.

I. ACCESSORIES:

1. [(Optional) Periodical Display & Storage Unit (with Hinged Display Shelves): Provide manufacturer's standard.]
2. [(Optional) Sloping Display Unit: Provide manufacturer's standard.]
3. [(Optional) Transverse Overhead Tie Struts: Provide manufacturer's standard.]
4. [(Optional) 3" (76MM) Base Shelf with Integral Low Back: Provide manufacturer's standard.]
5. [(Optional) 3" (76MM) Slotted Base Shelf: Provide manufacturer's standard.]
6. [(Optional) 3" (76MM) Sloped Plain Base Shelf: Provide manufacturer's standard.]

7. [(Optional) 3" (76MM) Sloped Base Shelf with Integral Low Back: Provide manufacturer's standard.]
8. [(Optional) 3" (76MM) Sloped Slotted Base Shelf: Provide manufacturer's standard.]
9. [(Optional) Adjustable Shelf with Integral Low Back: Provide manufacturer's standard.]
10. [(Optional) Slotted Adjustable Shelf: Provide manufacturer's standard.]
11. [(Optional) Sloped Plain Adjustable Shelf: Provide manufacturer's standard.]
12. [(Optional) Sloped Adjustable Shelf with Integral Low Back: Provide manufacturer's standard.]
13. [(Optional) Sloped Slotted Adjustable Shelf: Provide manufacturer's standard.]
14. [(Optional) Periodical Display Shelf (Hinged): Provide manufacturer's standard.]
15. [(Optional) Periodical Display Shelf (Hinged) with Plexiglas Covers: Provide manufacturer's standard.]
16. [(Optional) Fixed Display Shelf: Provide manufacturer's standard.]
17. [(Optional) Flat Storage Shelf: Provide manufacturer's standard.]
18. [(Optional) Pull-Out Reference Shelf: Provide manufacturer's standard.]
19. [(Optional) VHS, CD & Paperback Shelf: Provide manufacturer's standard.]
20. [(Optional) 2 Tier, Sloped VHS & CD Shelf: Provide manufacturer's standard.]
21. [(Optional) VHS & CD Wire Rack: Provide manufacturer's standard.]
22. [(Optional) 2 Tier Audio Cassette Tape Shelf: Provide manufacturer's standard.]
23. [(Optional) 2 Tier Microfilm Shelf: Provide manufacturer's standard.]
24. [(Optional) Multimedia Browsing Box: Provide manufacturer's standard.]
25. [(Optional) 1 Tier Multimedia Browsing Box (Divider-Type): Provide manufacturer's standard.]
26. [(Optional) 2 Tier Multimedia Browsing Box (Divider-Type): Provide manufacturer's standard.]
27. [(Optional) Zig-Zag Display Backstop: Provide manufacturer's standard.]
28. [(Optional) Centerstop (Offset for back-to-back shelving): Provide manufacturer's standard.]
29. [(Optional) 6" (152MM) high Dividers (for slotted shelves): Provide manufacturer's standard.]
30. [(Optional) 6 Tier Newspaper Rack: Provide manufacturer's standard.]
31. [(Optional) Media Bag Rack: Provide manufacturer's standard.]
32. [(Optional) Findable Book Support: Provide manufacturer's standard.]
33. [(Optional) Flat Book End: Provide manufacturer's standard.]
34. [(Optional) Clip On Book Support: Provide manufacturer's standard.]
35. [(Optional) "W" Hanging Wire Support: Provide manufacturer's standard.]
36. [(Optional) "Snap In" Wire Book Support: Provide manufacturer's standard.]
37. [(Optional) Integral Low-Back Divider: Provide manufacturer's standard.]
38. [(Optional) Range Finder: Provide manufacturer's standard.]

39. [(Optional) Continuous Card Holder: Provide manufacturer's standard.]
40. [(Optional) Shelf Label Holder: Provide manufacturer's standard.]
41. [(Optional) Canopy Light: Provide manufacturer's standard.]
42. [(Optional) Adjustable Shelf Filler: Provide manufacturer's standard.]
43. [(Optional) Adjustable Kick Plate: Provide manufacturer's standard.]
44. [(Optional) Base Shelf Filler: Provide manufacturer's standard.]
45. [(Optional) Intermediate Wall Filler: Provide manufacturer's standard.]
46. [(Optional) Corner Filler: Provide manufacturer's standard.]
47. [(Optional) Metal End Panel: Provide manufacturer's standard.]
48. [(Optional) Closed Back Kit: Provide manufacturer's standard.]
49. [(Optional) Closure Panel: Provide manufacturer's standard.]

J. Face Panels:

Materials: Metal End Panel [Plastic laminate clad particleboard with plastic edging on vertical edges].

1. Finishes: [Selected from manufacturer's standard available colors and patterns.] [(Optional) Selected by the [Architect] [Architect/Engineer] [Engineer] [Designer].]

## 2.4 FABRICATION

- A. General: Coordinate fabrication and delivery to ensure no delay in progress of the Work.

## 2.5 FINISHES

- A. Colors: [Selected from manufacturer's standard available colors.] [Provide in custom colors as selected by [Architect] [Architect/Engineer] [Engineer].]
- B. Paint Finish: Provide factory applied electrostatic powder coat paint. Meet or exceed specifications of the American Library Association.
- C. Low-Pressure Laminate Finish: [Selected from manufacturer's standard available colors and patterns.] [Provide in custom colors as selected by [Architect] [Architect/Engineer] [Engineer].]
- D. High-Pressure Laminate Finish: [Selected from manufacturer's standard available colors and patterns.] [Provide in custom colors as selected by [Architect] [Architect/Engineer] [Engineer].]
- E. [(Optional) (Describe finish materials)]



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine shelving units scheduled to receive accessories [with Installer present] for compliance with requirements for installation tolerances and other conditions affecting performance of specified accessory items.
- B. Verify that intended installation locations of sorter unit units will not interfere with or block established required exit paths or similar means of egress once units are installed.
- C. Proceed with accessory installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Follow manufacturer's written instructions for installation of each type of accessory item specified.

### 3.3 FIELD QUALITY CONTROL

- A. Verify accessory unit alignment and plumb after installation. Correct if required following manufacturer's instructions.
- B. Remove components that are chipped, scratched, or otherwise damaged and which do not match adjoining work. Replace with new matching units, installed as specified and in manner to eliminate evidence of replacement.

### 3.4 ADJUSTING

- A. Adjust all accessories to provide smoothly operating, visually acceptable installation.

### 3.5 CLEANING

- A. Immediately upon completion of installation, clean components and surfaces. Remove surplus materials, rubbish and debris resulting from installation upon completion of work and leave areas of installation in neat, clean condition.

### 3.6 DEMONSTRATION/TRAINING

- A. Schedule and conduct demonstration of installed accessory items and features with Owner's personnel.
- B. Schedule and conduct maintenance training with Owner's maintenance personnel. Training session should include lecture and demonstration of all maintenance and repair procedures that end user personnel would normally perform.

### 3.7 PROTECTION

- A. Protect system against damage during remainder of construction period. Advise Owner of additional protection needed to ensure that system will be without damage or deterioration at time of substantial completion.

END OF SECTION