

**SECTION 11 51 23
LIBRARY STACK SYSTEMS**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.

1.2 SECTION INCLUDES

- A. This specification covers materials of the library steel, bracket type book-stack.
 - 1. Unit heights, depths, and accessories as indicated on floor plans, specifications, or schedule of equipment.
 - 2. Provide proper floor anchoring for double-faced book stack and wall anchoring for wall or single faced shelving in an inconspicuous manner.
 - 3. Determine anchor requirements by field conditions in accordance with local codes and shelving manufactures requirements, otherwise not included in this specification.
 - 4. Provide Library Bureau SafeStak or Architect approved equal.

1.3 SUBMITTALS

- A. Manufacturer's descriptive product data
- B. Shop drawings showing shelving layout

1.4 WARRANTY

- A. Provide manufacturer's warranty defects in materials and workmanship for 1-year from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 DESCRIPTION

- A. Sway brace construction shall be of the bracket type, double-faced or single-faced with closed bases.

2.2 MATERIALS

- A. Sheet metal to be class-1 cold or hot rolled and full pickled.
- B. Gauge thicknesses are U.S. standard with the following minimum requirements:
 - 1. Shelves – 18-gauge
 - 2. Web stiffeners – 13-gauge
 - 3. Base brackets – 13-gauge
 - 4. Top tie channel – 16-gauge
 - 5. Adjustable shelf brackets – 16-gauge
 - 6. Upright columns – 16-gauge

2.3 CAPACITY REQUIREMENTS

- A. Each shelf shall have a minimum clearance between brackets of 35-7/16".

2.4 FINISH

- A. Automatically wash and phosphate coat all parts.
- B. Following a complete drying process, each part is to receive a finish coat of high solids polyester blend backed enamel.

2.5 COLOR

- A. Color selection is from manufacturer's standard (unless otherwise specified).

2.6 TYPE OF BOOK STACK

- A. Adjustable shelves hang on a central upright column in a cantilever manner allowing a wide

flexibility of sizes and accessory arrangement in any standard 36" wide section.

- B. Supply sections 24" wide or 30" wide as specified.
- C. Following are required component parts.
 - 1. INITIAL UPRIGHT COLUMNS
 - a. Form of not less than 16-ga. into a channel shape with no less than ½" stiffening flanges measuring 2" in the web and 1-3/16" at front and rear surfaces.
 - b. Uprights are to be perforated with a series of ¼" x ⅝" slots spaced 1" on vertical centers and located within 5/16" from the web.
 - c. Place every fifth and sixth slot shape differently for ease of shifting adjustable shelves.
 - d. Design uprights to receive sway braces for maximum stability.
 - e. All single-faced sections and double-faced sections receive two upright columns.
 - 2. DOUBLE-FACED UPRIGHT ASSEMBLIES
 - a. Consist of two uprights as described for the initial upright columns plus a 2¼" wide web stiffener of 13-gauge steel spot-welded together.
 - b. Supply this for units over 66" high; the spot-welds will be approximately 11" apart.
 - c. The space between the upright columns produced by the web stiffener provides a slip joint for the insertion of the base brackets and tie channel.
 - d. Units 66" high and less use two upright columns bolted together with ⅜" machine bolts and nuts.
 - 3. TOP TIE CHANNELS
 - a. Consist of not less than 16 ga Box formed 2-5/32" deep with 1⅜" downward flanges formed 90° ends.
 - b. Mechanically fasten individual channels to uprights with nuts and bolts.
 - 4. WEB STIFFENERS
 - a. Shall be 13-ga. 2¼" wide approx. 7½" shorter than uprights on all stacks over 66" high, keyed to engage base brackets to form a continuous structural member from floor to top of stack.
 - b. Weld web stiffener between two upright columns to form an upright assembly.
 - 5. BASE BRACKETS
 - a. Design to fit between uprights.
 - b. Material shall be no less than 13-ga. Brackets to have 90° flange at bottom to rest on floor punched to receive leveling glides and allow for 6 point leveling when specified.
 - c. Top and front edge of base brackets angled to match adjustable shelf brackets and to allow nesting adjustable shelves into base shelf area when desired.
 - 6. CLOSED BASE SHELVES
 - a. Form to meet industry performance standards of 50 plf without deflection in excess of 3/16".
 - b. One-piece construction designed to fit snugly around upright columns and base brackets without need of hardware fasteners.
 - c. Front height shall be at least 3" and sides shall have stiffening flanges, designed to inter-member with base brackets slots.

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7. SWAY BRACES
 - a. Combined with the welded SafeStak web stiffened column shall be provided as primary keys in meeting regulatory requirements for seismic risk zones established by authority having jurisdiction.
 - b. Provide all double-faced ranges with diagonal sway braces installed between the uprights, every third section with a minimum of one pair per range to prevent longitudinal sway of the stack ranges.
 - c. Use min ¼" steel rods sway braces, hooked into the web of stack uprights and provide turnbuckles insuring uprights in stack ranges are vertically plumb.
8. HARDWARE shall be rust proof, cadmium plated or equal and completely concealed from view in finished assembly with no projections to harm material or users.
9. SHELVES AND ACCESSORIES may use all flat, Tu-bar, divider and all special purpose shelves and accessories in any combination on SafeStak/SB.

PART 3 EXECUTION

3.1 INSTALLATION

- A. In accordance with manufacturer's installation procedures and design criteria.

END OF SECTION