

SECTION 11 61 53
STAGE CURTAINS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 specification section, apply to work of this section

1.2 SECTION INCLUDES

- A. Front Setting - including valance, front curtain (main drape) for multi-purpose room
- B. Back Slope and Side Marks
- C. Cyclorama Curtain and track for CCTV-Studio.

1.3 QUALITY ASSURANCE

- A. Fabricator/Installer Qualifications: Manufacturer shall have no less than 5-years of successful experience in fabricating and installing stage curtains of equal size and value as this project.
- B. Flame Resistance Requirements:
 - 1. Provide certified flame resistant stage curtains in accordance with NFPA 701.
 - 2. Permanently attach label to each curtain indicating if curtain is permanently and inherently flame resistant, or if it will require re-treatment after dry cleaning.

1.4 REFERENCES

- A. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless
- B. ASTM A653/A653M - Standard Specifications for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dipped Process
- C. ASTM A123/A123M – Standard Specifications for Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products
- D. ASTM B221 Standard Specifications for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wires, Profiles and Tubes
- E. ASTM A153/A153 – Standard Specifications for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- F. NFPA 701 – Standard Methods of Fire Tests for Flame Propagation of Textiles and Films
- G. FBC - Florida Building Code
- H. FFPC - Florida Fire Prevention Code

1.5 SUBMITTALS

- A. Provide manufacturer's specifications, installation instructions, and general recommendations, including certification that materials comply with requirements.
- B. Submit shop drawings, including plans, elevations, and detail sections of typical rigging elements.
 - 1. Show anchors, hardware, operating equipment, and other components not included in manufacturer's standard product data.
- C. Submit 12" square samples of each fabric in color indicated with flame proofing as IFR.
- D. Provide certificates signed by the curtain fabricator certifying that the products comply with the specifications.

1.6 SUBSTITUTIONS

- A. There are no substitutions allowed for polyester material, cotton not allowed.

1.7 WARRANTIES AND GUARANTEES

- A. Warranty all materials and workmanship to be free of defects for a period of 1-year.
- B. Provide written guarantee the repair or replacement within 30-days of written notice of any defects during the 1-year following substantial completion.
- C. Warranty does not apply to ordinary wear or improper usage.

1.8 PROJECT CONDITIONS

- A. Field verify actual stage curtain openings before fabrication, show field measurements on final shop drawing.
- B. Coordinate fabrication schedule with construction progress to avoid delays.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Provide a napped fabric of 100% Inherently Flame Resistant Polyester, 54" min width.
 - 1. Not less than 48 backing ends per inch, 51 pile ends per inch, and 48 picks per inch.
 - 2. 1224 pile tufts per square inch
 - 3. Provide a heavyweight fabric weighing not less than 24-oz per lineal yard with pile height of approximately 101 mils.
- B. Lining if required shall be 100% Inherently Flame Resistant Polyester woven in a warp-faced twill 72" min width.
- C. Color as selected by the Architect, with black lining.
- D. Provide a permanent labels sewn on the curtain material in the off stage bottom edge on the up stage side, between 30" and 60" above floor.
 - 1. Label shall state material is "Inherently Flame Resistant Polyester" per NFA 701 and as specified herein.

2.2 INTERMEDIATE AND CYCLORAMA SETTING FABRIC/CTTVC STUDIO CURTAIN

- A. Provide a Woven Chevron 2000 - 100% Inherently Flame Resistant Polyester, 54" min width.
 - 1. Provide a medium-weight fabric weighing not less than 14-oz per lineal yard with a pile height of approximately 105 mils.
- B. Color as selected by the Architect, with black lining.
- C. Provide a TV Studio Curtain of 100% inherently Flame Resistant Trevira Polyester 72" min width, weighing no less than 14 ounces per linear yard.

2.3 CURTAIN FABRICATION

- A. Curtains:
 - 1. Provide not less than 50% additional fullness for curtains and provide vertical seams, unless otherwise indicated.
 - 2. Do not use fabric cuts less than half width, and fabricate velour curtains with nap down.
- B. Vertical Hems: Provide not less than 2" wide with 1" tuck, and machine sewn with no salvage material visible from front of curtain; sew open ends of hems closed.
- C. Turn Backs: Where indicated, provide by folding 12" of face fabric turned back with 1" tuck and secure by sewing the turn back vertically.
- D. Top Hems: Reinforce by double-stitching 3½" wide heavy jute webbing to top edge with minimum 2" of face fabric turned under.
- E. Pleats:
 - 1. Provide fullness in curtain by sewing 6" of additional material into double-stitched box pleats spaced at 12" o.c. along top hem reinforcing.
 - 2. Provide not less than No. 2 brass grommets spaced 12" o.c. and centered on box pleats, for tie lines, 'S' hooks, or Quick Links.
 - 3. Arrange vertical seams so they do not fall on faces of pleats.
 - 4. Provide No.-3 brass grommets for velour curtains at 6" spacing.
- F. Bottom Hems:

1. For curtains that do not hang to floor, provide hems not less than 3" deep with 3/4" weight tape or galvanized jack chain.
 2. For floor-length curtains, provide at least 6" deep hems with 1" weight tape.
 3. Sew open ends of hem closed.
- G. Lining (if required): Provide lining in same fullness as face fabric and finished 2" shorter than face fabric, and of same fiber type as face fabric.
1. Attach lining to face fabric along bottom line at seams with 4" long strips of heavy woven polyester tape.
- 2.4 METAL PRODUCTS
- A. Steel pipe: ASTM A53/A53M, Grade A; black, standard weight (Schedule 40), 1½" nominal, unless otherwise indicated.
- B. Galvanized Steel Sheet: Provide an ASTM 653/A653M zinc-coated carbon steel of commercial quality, conforming to ASTM A123/A123M- G60 zinc coating, 14-gauged minimum.
- C. Aluminum: Alloy and temper recommended by manufacturer for strength and corrosion resistance, mill finish, ASTM B221 for extrusions.
- D. Supports, Clamps and Anchors: Sheet metal in manufacturer's standard gages, galvanized after fabrication in accordance with ASTM A153/A153M, Class B.
- E. Support Chain (long link):
1. Minimum 3/16", not less than 0.276" dia. material (all welded proof coil) attached by a forged screw pin shackle and safety bolt.
 2. Wrap chain 1½ times around batten.
 3. Use a pipe clamp on the batten if the chain is less than one foot from the end of the batten.
- F. Inserts, Bolts and Fasteners: Provide the manufacturer's standard.
- 2.5 CURTAIN TRACK - STRAIGHT
- A. Steel Tracks, General: Fabricate of not less than 0.075" (14-gauge) nominal thickness galvanized roll-formed steel, with continuous bottom slot, and with each half of track in one continuous piece where applicable.
1. Provide curtain carriers for track spaced at 12" o.c.
- B. Heavy Duty Track (Front Setting Curtain): Equip track with heavy-duty live-end double pulley and heavy-duty dead-end single pulley, with 5" cast-iron or nylon wheels on ball bearings, enclosed in steel housings.
1. Provide curtain carriers of molded nylon with a pair of neoprene or nylon tired ball bearing wheels riveted parallel to body.
 2. Equip carriers with neoprene or rubber bumper, heavy-duty swivel eye, and trim chain for attaching curtain ties, Quick Links or `S` hooks.
 3. Provide end stops for track and adjustable floor block designed to maintain proper tension on 3/8" stretch-resistant operating line of braided polypropylene or fiberglass center cord.
- C. Medium Duty Track: Provide adjustable pulley blocks containing sleeve-bearing wheels with guards.
1. Curtain carriers of plated or rust proof steel with pair of polyethylene wheels fastened parallel to body by rust proof steel rivets.
 2. Carriers with swivel eye for attaching curtain snap or `S` hook. Provide end stops for track and adjustable floor block to maintain tension on ¼" stretch resistant operating line of braided polypropylene or fiberglass cord.
 3. Provide carriers with backpack guide accessory to allow offstage curtain folding.
- D. Products: Subject to compliance with requirements, provide one of the following:

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1. Silent Steel Model No. 280, Automatic Devices Company
2. Tru-Roll Model No. 1000, Grosh Scenic Studios, Inc
3. Atlas Silk Model No. 400, H & H Specialties, Inc
4. Silent Steel Model No.170, ADC for lighter weight applications
5. Other approved equal

2.6 CURVED CURTAIN TRACK FABRICATION

(CYCLORAMNINTERMEDIATE SETTING/TV STUDIO CURTAINS)

- A. Fabricate curved curtain tracks for walk-along operation without cord or pulleys, designed for rigid attachment to ceiling or hanging clamps.
- B. Fabricate of not less than 0.075-inch (14-gauge) nominal thickness galvanized roll-formed steel with continuous bottom slot.
 1. Provide curtain carriers of plated or rustproof steel with pair of polyethylene wheels fastened parallel to body by rustproof steel rivets.
 2. Equip carriers with swivel eye for attaching curtain ties, Quick Links, or `S` hooks.
- C. Subject to compliance with requirements, curved tracks allowable in the work include, but are not limited to, the following:
 1. Besteel model No. 140 Curve, Automatic Devices Co
 2. Atlas Silk Model No 154 Curve, H & H Specialties, Inc
 3. Other approved equal

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under the provisions of Section 01 31 00.

3.2 PREPARATION

- A. Furnish layout for inserts, clips or other supports installed by other trades.

3.3 INSTALLATION

- A. Install in accordance with approved submittals, manufacturer's printed instructions, and recommendations, complying with governing regulations.
- B. Verify all materials are properly tagged, certified for fire resistance, and flame retardant.

3.4 BATTENS

- A. Fabricate battens from steel pipe with a minimum number of joints.
 1. As necessary for required lengths, connect pipe with a drive fit pipe sleeve not less than 18" long, and secure with four flush rivets, plug welds, threaded couplings, or another equally secure method.
 2. Shop paint completed pipe battens with black paint to comply with Section 09900.
 3. In the TV Studio Fabricate a 5'-0" x 5'-0" pipe grid with overall size per plans, 6" from curtained walls.
 4. Provide matching fittings at all pipe intersections.
- B. Install battens by suspending at proper heights with steel chains, aircraft cable, or minimum 3/8" all thread spaced at not more than 10' o.c.
- C. Secure minimum 3/16" all welded proof coil chains, aircraft cable or 3/8" all thread either directly to structures or to inserts, eye-screws, or other devices that are secure and appropriate to substrate, and that will not deteriorate or fail with age or elevated temperatures.
 1. Coordinate suspension penetrations with suspended ceiling, neatly working grid and cut ceiling tile around and tight to chains/hangers.

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3.5 TRACK INSTALLATION

- A. Above Structure Mounted Tracks: Secure min 3/16" all welded proof coil chains, air craft cable or 3/8" all thread directly to structures or to inserts, eye-screws, or other devices that are secure and appropriate to substrate, and that will not deteriorate or fail with age or elevated temperatures.
 - 1. Coordinate suspension penetrations with suspended ceiling, neatly working grid and cut ceiling tile around and tight to chains/hangers.
- B. Wall Mounted Tracks: Install tracks by suspending from manufacturer's special heavy-duty steel "L" brackets securely mounted to wall construction at recommended spacing.
- C. Batten-hung Tracks: Install track by suspending from pipe batten with manufacturer's special pipe clamps at recommended spacing.
- D. Heavy-Duty Track: Do not exceed 7' between supports.
- E. Medium-Duty Track: Do not exceed 6' between supports.
- F. Curved/Walk-Along Track: Do not exceed 4' between supports, and provide additional supports at curves and splices.
- G. Install track for center-parting curtains with not less than a 2' overlap of track sections at center, supported by special lap clamps.

3.6 CURTAIN INSTALLATION

- A. Track-Hung: Secure curtains to track carriers with track manufacturer's special heavy duty S hooks or Quick Links for grommets.
- B. Batten Hung: Secure curtains to pipe battens with minimum #4 (1/8" nominal size) by 36" long braided soft cotton tie lines. Run tie lines through curtain grommets.

END OF SECTION