FlexTact® Specification
Section 11 67 23 - Shooting Range Equipment
Or
Section 10-22-39/10650 Custom Operable Partitions

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:

+ NON-LETHAL Simunitions/Tactical Training Area

1.3 DEFINITIONS

A. NIC: Noise isolation class.

B. NVLAP: National Voluntary Laboratory Accreditation Program.

C. STC: Sound transmission class.

1.4 SUBMITTALS

A. Product Data: Material descriptions, construction details, finishes, installation details, and operating instructions for each type of operable panel partition, component, and accessory specified. Include data on surface-burning characteristics and third-party face material durability.

B. Shop Drawings: Show location and extent of movable operable panel partitions. Include plans, elevations, sections, details, numbered panel installation sequence, attachments to other construction, and accessories. Indicate dimensions; weights; conditions at openings and for storage; and required installation, storage, and operating clearances. Indicate location and installation requirements for hardware and track, and direction of travel. Show blocking to be provided by others. Include the following:

1. Calculations: Calculate requirements for supporting operable panel partitions and verify capacity of carriers and track components to support loads; indicate deflection limits for partition and adjacent construction.

C. Setting Drawings: For embedded items and cutouts required in other work, including support beam punching template.

D. Sample: Submit samples of actual panel construction, finishes, and all track, trolley, and hardware components.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below and of same thickness and material indicated for the Work. If finishes involve

normal color pattern and texture variations, include sample sets showing the full range of variations expected.

1. Panel Face Material: Manufacturer's standard-size unit, not less than 3 inches square.
2. Panel Edge Material: Not less than full width by 3 inches long.

F. Product Certificates: Signed by manufacturers of operable panel partitions and testing authorities certifying that products furnished comply with requirements.

G. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

H. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

I. Product Test Reports: From a qualified testing agency indicating that each operable panel partition complies with requirements, based on comprehensive testing of current products.
   a. Fire Rating tests – surface materials.

J. Maintenance Data: For the following to include in maintenance manuals specified in Division 1:

1. Panel face finishes and finishes for exposed trim and accessories. Include precautions for cleaning materials and methods that could be detrimental to finishes and performance.
2. Seals, hardware, track, carriers, and other operating components.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified in writing by the operable panel partition manufacturer as qualified to install the manufacturer's partition systems for work similar in material, design, and extent to that indicated for this Project.

B. Fire-Test-Response Characteristics: Provide operable panel partitions with the following fire-test-response characteristics, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
   1. Surface-Burning Characteristics: As follows, per ASTM E 84:
      a. Flame Spread: 25 or less.
      b. Smoke Developed: 450 or less.

   2. Fire Growth Contribution: Textile wall coverings complying with the acceptance criteria of UBC Standard B-2.

1.7 WARRANTY

A. Provide warranty that guarantees the operable partition system against defects in materials and workmanship for a period of two (2) years that includes panels, operable doors, door hardware, mechanical seals, trolleys, and track from the date of substantial completion. Any malfunction of the product during the warranty period must be reported by the owner / user to manufacturer or authorized agent within five (5) business days for the warranty to cover malfunction. Manufacturer to provide certificate covering materials and **LABOR** for the period of the warranty specified.

B. Malicious damage, damage resulting from delays is reporting malfunctions, misuse of the partition system, and abuse of the partition system are excluded from this warranty.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products indicated for each designation in the Operable Panel Partition Schedule at the end of Part 3.7.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. **Kwik-Wall Co., Springfield, IL**
2. **Gibca Furniture Industries LTD (LLC), United Arab Emirates**
3. **Hufcor Partition Manufacturing, dba Hufcor Asia Pacific, Hong Kong**

Note: Manufacture's must obtain pre-approval by creating a full size model at least 12' x 12' with three operating sample panels or provide a list of at least two projects with similar track grid systems and panel performance characteristics, including stand alone pass door systems.

2.2 MATERIALS

FLEXTACT simunitions range wall systems are designated to indicate desired performance, quality level, and appearance standards.

A. Steel Frame: Frames shall be precision welded of minimum 16 gauge with 3" [76mm] minimum profile.

B. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use, corrosion resistance, and finish indicated; ASTM E 221 (ASTM E 221M) for extrusions; manufacturer's standard strengths and thickness for type of use.

1. Frame Reinforcing: Manufacturer's standard steel or aluminum

C. Face Sheets: High-Pressure Laminate (HPL) with manufacture's standard medium density fiberboard (MDF) backing. MDF faces required for rigidity and impact resistance. Faces must be replaceable onsite in the event of extended damage during the life of system.

D. Gypsum Board: Not an allowed face substrate due to impact resistance required during training exercises.

2.3 OPERABLE PANEL PARTITIONS

A. Panel Construction: Provide top reinforcement as required to support panel from suspension components and provide reinforcement for hardware attachment. Fabricate panels with tight hairline joints and concealed fasteners. Fabricate panels so finished in-place partition is rigid; level; plumb; aligned, with tight joints and uniform appearance; and free of bow, warp, twist, deformation, and surface and finish irregularities. **Panel face shall be continuous full height face with horizontal splices or joints in panel faces allowed at top of pass doors legs.**

B. Dimensions: Fabricate operable panel partitions, from manufacturer's standard sizes, to form an assembled system of dimensions indicated on Drawings and verified by field measurements. Panels not to exceed 48" wide.

C. Partitions must have aluminum or steel protective vertical and horizontal edges trim and must be integral part of frame or mechanically fastened to panel edges. Plastic, glued or taped edge trims not accepted. "Trimless" or monolithic panels are not acceptable.

D. Vertical and Horizontal protective edge trim finished as follows:

1. Manufacture's standard color selection: Grey

F. Hardware: Manufacturer's standard as required to operate operable panel partition and accessories; with decorative, protective finish to match horizontal trim.

2.4 SEALS

A. General: Provide types of acoustical and stabilizing seals indicated that produce operable panel partitions complying with performance requirements and the following:

1. Seals made from materials and profiles that minimize vertical light leakage when panels are set in place.

B. Vertical Seals: Vertical PVC seals must allow panels to pass through 90-degree intersections without disassembly of adjacent panels allowing for interchangeable and multiple set-up locations for all panels. Seals must provide enough mass and durability so to block simunitions rounds from penetrating between panels.

C. Horizontal Top Seals: None required.

D. Horizontal Bottom Seals: Mechanical, retractable, constant-force-contact seal exerting uniform constant downward force pressure on the floor of 100 pounds minimum when extended, ensuring horizontal and vertical sealing and resisting panel movement.

1. Mechanically Operated: Extension and retraction of bottom seal by waist high operating handle, operating range not less than: 2-inch operating clearance between retracted seal and floor finish. Bottom mechanical seal sets with 190-degree turn of the removable operating handle or "key." Seal activation requiring multiple cranks of operating handle or "automatic plunger"/bayonette seals shall not be allowed.
2. Panels containing pass through doors shall have retractable bottom seals. Bottom seal shall be equipped to provide a minimum of 100 lb seal pressure per pass door leg for stability and proper door operation. All panels, including pass doors, must remain stable without being interlocked with adjacent panels.
3. Bottom seals must provide stability without the use of floor bolts or penetrations into the floor. Face applied foot bolt stabilizers are not acceptable.

2.5 FINISH FACING

A. General: Provide finish facings that comply with indicated fire-test-response characteristics and that are factory applied to operable panel partitions with appropriate backing, using mildew-resistant nonstaining adhesive as recommended by facing manufacturer's written instructions.

1. Apply seamless facings free from air bubbles, wrinkles, blisters, and other defects. Tightly secure and conceal raw and selvage edges of facing for finished appearance.

B. Manufacture's standard High-Pressure Laminate (HPL). Color selected from standard manufacturer's options.

C. Panels with Window Inserts: Window insert must be of smooth, extruded aluminum and finished to match vertical and horizontal trim color - grey. No glass is required in window panels and all faux glass stops are to be mechanically fastened into panels allowing both materials, equipment and trainees to pass through open windows. Window openings must be reinforced and blocked to support the weight of trainees.

2.6 SUSPENSION SYSTEMS

A. Overhead Support System: Traditional steel I-beam support by others.

B. OPTIONAL Overhead Support: Unispan® by Kwik-Wall overhead support truss systems per plan. Support system is independent of the building structure and transfers loads of entire system to the floor. Must allow for up to 39' (12m) of clear space without support posts.

1. The supporting truss shall be factory fabricated of steel and aluminum. Unispan is attached to the building structure for lateral support only. The load of the truss and partition is supported by the Unispan column posts. Bolt together truss has anodized aluminum top and bottom cords with integral anodized aluminum track and steel web-members.
2. Posts. End columns shall be 2-1/2" x 5" [63.5 x 127] clear anodized aluminum posts. Posts shall be attached to the truss with steel brackets and bolts. Posts shall be anchored to the floor with concealed fasteners. Posts shall be located approximately 1-1/2" [38] from adjacent wall surfaces.
3. Ceiling anchors provide lateral support and shall be set at intervals across the span of the beam. Blocking for ceiling anchors to be provided by others in accordance with the plans.
4. Weight of the system
   a. The horizontal truss shall weigh 10-12 lbs. per lineal foot of width.
   b. The support columns shall weigh 3.5 lbs. per foot of height each.
   c. The floor shall support a maximum of 360 psi at each post.
5. Finishes
   a. Exposed trim and track shall be of clear anodized architectural grade extruded aluminum alloy 6063-T6.
   b. Posts shall be of clear anodized architectural grade extruded aluminum alloy 6063-T6.

C. Suspension Tracks: Clear anodized structural aluminum with adjustable steel hanger rods for overhead support, designed for type of operation, size, and weight of operable panel partition indicated. Size track to support partition operation and storage without damage to suspension system, operable panel partitions, or adjacent construction. Limit track deflection to no more than 0.10 inch between bracket supports. Provide a continuous system of track sections and accessories to accommodate configuration and layout indicated for partition operation and storage. Track alignment must provide smooth running surface at the intersections. Steel track with single carrier systems is not acceptable.

D. Carriers: Trolley system as required for configuration type, size, and weight of partition and for easy operation; with self-lubricating, ball-bearing wheels.

1. FlexTact® <u>Simunitions/Tactical Training/Paint Ball Training Area:</u>
   Carriers to have two, counter rotating steel wheels with precision ground radial bearings. Bearings are inserted into a Delrin tire.
2. Single carrier systems are not allowed.

D. Track Intersections: As required for type of operation, storage, track configuration, and layout indicated for operable panel partition, and compatible with partition assembly specified. Fabricate track intersections clear anodized structural aluminum.

E. Aluminum Finish: Manufacturer's clear anodized finish.

F. Track & Carriers must support weight of panel and an additional 300lbs due to window entry exercises when trainee's weight is applied to track and carriers as they pass through window panels.

2.6 ACCESSORIES

A. Pass Doors: Swinging door built into and matching panel materials, construction, acoustical qualities and thickness, complete with frames and operating hardware. Hinges finished matching other exposed hardware.

1. Single Pass Door assemblies: 32 by 80 inches single, where indicated on plans with the following:

    a. Door Seals: Bottom 2", vinyl sweep seals required. Floor bolts mounted to panel face are not acceptable.
    b. Door face material must be made of HPL backed with ½" MDF and additional layer of a minimum 20 ga. steel to withstand breach impacts.
    c. Adjustable, concealed door closers required.
    d. Roller latch hardware required allowing doors to be breached open during forced entry exercises. Doors must also contain a positive latch latching hardware so that doorknobs and lever activate latches.
        a. Each passdoor must contain both a lever (commercial style) handle on one side of the door and a knob (residential) twist style handle.
        b. The lever must be adjustable to allow passdoor panel to pass between adjacent panels at intersections and not interfere with the vertical sweep seals.
    e. Exit Signs (not required)
    f. Thresholds are not acceptable.
    g. No face activated seal actuators allowed.
    h. Door Finish: See Section 3.7 – Operable Partition Panel Schedule:
        a. General: Manufacture's standard vinyl with wood appearance to mimic the look of wood doors as shown on plans.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine flooring, structural support, and opening, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of operable panel partitions. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer's written installation, drawings, and approved shop drawings.

B. Install operable panel partitions and accessories after other finishing operations, including painting, have been completed.

C. Match operable panel partitions for color and pattern and grain by installing panels from marked packages in numbered sequence indicated on Shop Drawings.

D. Broken, cracked, chipped, deformed, or unmatched panels are not acceptable.

3.3 FIELD QUALITY CONTROL

A. Acoustical Field Testing: None Required.

B. Installer qualifications: Installer shall be trained in the installation of operable partition systems and shall have minimum 5 years experience in the installation of systems of similar nature and scope as required for this project. If requested by Architect, submit evidence of satisfactory installations of similar work within this period.

3.4 ADJUSTING

A. Adjust operable panel partitions to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware other moving parts.

B. Pass Doors: Adjust to operate smoothly and easily, without binding or warping.
Check and readjust operating hardware. Confirm that roller latches and concealed door closures engage accurately and securely without forcing or binding.

3.5 CLEANING AND PROTECTION

A. Clean soiled surfaces, fabric facing, and metal surfaces on completing installation of operable panel partitions, to remove dust, loose fibers, fingerprints, adhesives, and other foreign materials according to manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, which ensures operable panel partitions are without damage or deterioration at time of Substantial Completion.

C. Replace panels that cannot be cleaned and repaired, in a manner approved by Architect-Engineer before time of Substantial Completion.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain operable panel partitions.

1. Test and adjust seals, hardware, carriers, tracks, pass doors, pocket doors, exit signs, controls, and other operable components. Replace damaged or malfunctioning operable components.
2. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment and schedules.
3. Review data in maintenance manuals. Refer to "Project Closeout".
4. Review data in maintenance manuals. Refer to "Operation and Maintenance Data".
5. Schedule training with Owner with at lease seven days' advance notice.
6. Review specific Safety and Operation Manual.

3.7 SIMUNITIONS OPERABLE PANEL PARTITION SCHEDULE

A. <u>Simunitions/Tactical Training Room;</u> Comply with the following:
Heavy Duty Use Panel Systems Only
1. Available Product: Kwik-Wall Series 631 FlexTact panels with Type 36 track system.
2. Partition Operation and Configuration: Manually operated, individual panels nominally 3" (75mm) thick.
3. Faces: Medium Density Fiberboard (MDF), 5/8" thick faced with continuous manufacturers standard High-Pressure Laminate (HPL). Gypsum board backers or faces not allowed.
4. Panel Weight: 7.0 lb/sq. ft maximum.
5. Panel Thickness: Not less than 3" [76mm] inches.
6. Edges: Metal protective edge trim required
    + Must be part of frame structure or mechanically fastened to frame
    + Must be finished in one of three standard color selections

7. Vertical Seals: Flexible, minimum 5”, dual thickness extruded PVC seal that allows panels to be moved past adjacent seals without the need to reset adjacent panels at all 90-degree intersections.
8. Horizontal Seals
   Top Seals: none required
   Bottom Seals: Side operated, waist-high activator that creates minimum 80-100 lbs. of downward seal force. Minimum 2” operation clearance
9. Finish Facing:
   Basic Panels: HPL
   Pass door Panel: HPL
   Window Inserts: HPL with aluminum window frame cut outs.
10. Pass Doors:
   Leg Seals: 100lbs minimum downward seal force
   Roller Latch Closures
   Concealed Door Closure
   Dual action handles – lever style and twist style handles.
12. STC: Not required performance criteria
13. NIC: Note required performance criteria

END OF SECTION 10-22-26/10651