

SECTION 12 20 00
WINDOW TREATMENTS
Design Standard

PART 1 GENERAL

1.1 PURPOSE:

Natural daylighting to indoor spaces at SMCCCD is encouraged. Daylighting conserves electrical use through voided mechanical lighting, creates a more natural indoor environment that feels better for our occupants, and has been found to improve academic performance. During the course of the day, however, and depending on lighting control necessary for the desired use and activity planned for a room, daylighting must be monitored and tempered by window treatments that shall serve multiple functions: solar shading or black-out, glare reduction, thermal insulation, and the provision for privacy.

Due to the transient nature of SMCCCD's building occupants, as well as frequent and heavy usage, any window treatment must have robust components and operating mechanisms, and operation must be intuitive. The following design standard is the learned result of the implementation of a variety of solutions across several projects.

San Mateo County Community College District is strongly committed to promoting sustainability throughout their campus projects. Section 01 81 13 Sustainability of the Design Standard provides guidelines and recommendations for implementing sustainability strategies. Where relevant, specific sustainability criteria is noted in this section; however, each project team should review and cross reference that front section while developing the specific project and its documentation. Each discipline shall conform that specific performance and manufacturer information provided in the specification section is in alignment with code requirements, LEED criteria, and any other goals for sustainability.

PART 2 PRODUCT

2.1 SOLAR ROLLER SHADES

MechoShade Systems is the preferred manufacturer of solar roller shades for the following reasons:

A. Performance and maintenance features:

1. The shade cloth filters the sunlight, lowers solar heat gain, and improves occupant comfort by reducing eye strain due to glare.
2. The shade cloth is an open weave and therefore allows some transparency that affords a visual connection to the exterior environment. During daylight hours, this also provides some degree of privacy. (For security reasons, it should be understood that at night, however, the situation is reversed, and the view to the outside is obscured, but the view to the interior is unimpeded).
3. The flat surface and washable fabric is easy to clean. This ease of maintenance allows for easy and regular cleaning by our custodial crews, limiting dust in the indoor environment and improving indoor air quality.
4. Damaged fabric can be easily replaced by local staff, reducing the life-cycle cost of ownership.
5. Manufacturer offers 25 year on-site parts warranty on all products, further reducing SMCCCD's life cycle cost of ownership.

6. Installation technicians are manufacturer-certified, ensuring quality in installation.

B. Guidelines for application:

1. Shades shall be single layer installations.
2. In special circumstances where a room has a programmatic requirement of complete black out capability (such as: certain Physics labs, photography / film classrooms, art history classrooms, etc.) a simple and economical black out curtain using a rod and ring system should be designed.
3. Side channels shall not to be used. SMCCCD has had suboptimal side channel experiences: if a window is opened and there is a strong cross-breeze, while the shade is down, the shade is often drawn out of its channel, damaging the shade fabric and tangling the draw cord.
4. Cord-stays shall be specified for all manually-operated shades.
5. Metal on metal gearing mechanism, and metal chains for operation shall be specified. This configuration provides a higher ratio of pull action to shade movement.
6. Shades covering heights of over 15 feet shall be motorized, to prevent possible operator injury from heavy lifting.
7. The shade fabric shall be a maximum of 8 ft in width, to prevent possible operator injury from heavy lifting.
8. Shade widths should be equally spaced across an opening if longer than 8'-0" in width. Where mullions occur within the opening, matching the mullion spacing is preferred. Minimum allowable shade width shall be governed by the actual size of the opening, or the condition where if the width were added to the next adjacent opening, the combined width would result in a shade greater than 8 feet.
9. When multiple shades are to be operated in unison (e.g., a forum-sized lecture room, a library, a large conference room or event space), the shades shall be motorized and have ganged controls.
10. Where the top rail will be visible, specify a metal fascia to match the color of the shade. Specify the longest possible lengths for fascias, for the best aesthetic effect.
11. When possible, specify inside mounting.

C. APPROVED MECHOSHADE PRODUCTS

1. 1000 Series Dense Vertical Weave with 2-3% Openness Factor provides a uniform color on either side of the window. This is the preferred product, as it provides an acceptable level of solar control while also offering transparency. The darker color lends a richness to the window aesthetic from either inside or outside. Note that darker colored shade cloth affords greater transparency and enhanced views to the outside environment.
2. 6000 Series EuroTwill™ Reversible Fabric with 3% Openness Factor provides a lighter color on the inside and a darker color on the outside of the window. This is an alternate product on the Cañada College palette, for projects where the inside shade cloth color should be lighter while still offering the richness of a darker color on the outside. Note that the lighter colored shade cloth affords lesser transparency and obscured views to the outside environment, will show dirt more readily, and does not

control glare as well as the darker colored shade cloth. In addition, the greater openness factor may not provide adequate room darkening for projection.

3. 0700 Series Blackout ShadeCloths are an opaque vinyl/fiberglass/vinyl laminated shade cloth that is appropriate for multi-media area functions. 0700 Series provides insulation and opacity at the window wall. If installing blackout shades in combination with solar shades, place blackout shade at plane closest to the window.

College	Mechoshade Product	Description
Cañada College	1004 Black/Brown	Dark bronze color
	6016 Slate	Medium grey color exterior, slightly lighter color interior
	0706 Oyster	Blackout shade
College of San Mateo	1004 Black/Brown	Standard solar shade
	6016 Slate	Medium grey color exterior, slightly lighter color interior
	0706 Oyster	Blackout shade
Skyline College	1004 Black/Brown	Standard solar shade
	6016 Slate	Medium grey color exterior, slightly lighter color interior
	0706 Oyster	Blackout shade

4. Deviations from the standard products must be approved in writing by the Executive Director of Construction Planning or Vice Chancellor of Facilities.

2.2 HORIZONTAL BLINDS

- A. In general, horizontal window blinds do not meet the stringent criteria of functionality and durability in our more demanding environments such as classrooms, student (or heavily) occupied offices and meeting rooms.
 1. When closed, glare reduction value is less than solar roller shades and visual access to the campus surroundings is shut off completely.
 2. When opened, all glare reduction and privacy is eliminated.
 3. Thermal insulating values are marginal, reducing occupant comfort levels and resulting in increased mechanical cooling loads.
 4. Horizontal blinds are easily damaged and difficult to keep clean.
- B. However, as a lower cost alternative they can be an appropriate choice in some projects and environments such as:
 1. Projects where the life expectancy of the facility is five years or less.
 2. Projects where budget restrictions are a driving factor and their use is approved by the Executive Director of Construction Planning or the Vice Chancellor of Facilities.
 3. Horizontal blinds may be used at glass doors on the exterior and interior of the building. In these cases the bottom rail must be secured to the down position and the raising cord must be hidden in the top rail.
 4. Interior windows between rooms, where privacy may be desired at times but thermal and glare control are nonissues.
- C. Horizontal blinds application guidelines:
 1. Where the top rail will be visible, specify a metal fascia to match the color of the shade. Specify the longest possible lengths for fascias, for the best aesthetic effect.
 2. When possible, specify inside mounting.

3. When installed on doors, specify attachment of bottom rail in the down position and hide the raising cord in the top rail.
- D. Approved horizontal shade products:
1. In classrooms: Levolor Riviera, Dust Guard 2" school blinds, color: alabaster
 2. In offices: Levolor Riviera, Dust Guard 2" school blinds, color: alabaster
 3. On doors: Levolor Riviera Classic 8-Gauge 1" mini-blinds, color: alabaster

2.3 SPECIAL WINDOW TREATMENT APPLICATION – COLLEGE OF SAN MATEO

A typical existing condition at the College of San Mateo are high triangular shaped windows. There are several choices for addressing those windows. Approval of the designer's proposed solution shall be made by the Executive Director of Construction Planning or the Vice Chancellor of Facilities on a per project basis

- A. Alternate 1: A removable, re-attachable shade cloth fabric panel on a triangular wood frame that attaches via hook and loop fabric tabs. Fabric must be applied on both sides of the triangular framework, so that the window treatment appears acceptable from both inside and outside. This solution is acceptable where there is enough room to periodically remove the panel for cleaning.
- B. Alternate 2: A removable, re-attachable shade cloth fabric panel on a triangular metal frame that attaches via mechanical fasteners..
- C. Alternate 3: A Painted window pane. This is the more appropriate solution when the access to the window glass is restricted. Typically, the glazing is painted in two coats. The first coat, applied to the window interior, is a dark color (black or bronze) similar to the mullion. The second coat is either a dark color (black or bronze) or the same color as the adjacent wall (bone, or an alternate accent color. Note that the dark first coat appears best from the outside; however, it may cause exacerbated pane expansion and subsequent breakage if adequate expansion space was not originally accommodated
- D. Alternate 4: No treatment on the triangular windows may be an option, depending on solar exposure and instructional program requirements.

2.4 APPROVED MANUFACTURERS

- A. Mechoshade
- B. Levelor

PART 3 EXECUTION

3.1 SUBSTITUTES ALLOWED?

- A. No substitutes allowed.
- B. Pursuant to Section 3400 of the Public Contract: "Mechoshade" and "Levelor" window treatments are now in use on the particular public improvement described as San Mateo County Community College District. At each instance in these specifications that a designated material, product, thing or service is designated by the brand name "Mechoshade" and "Levelor" is designated to support the existing solar shading system that is in place at Skyline College, College of San Mateo, Cañada College and the District Administration Building. The Contractor will furnish and apply only "Mechoshade" and "Levelor" as required, and no substitutions shall be deemed to be "or equal" or allowed.

3.2 ASSOCIATED DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

Instructional Spaces Design Standard

Administration Spaces Design Standard

END OF SECTION