

Technical Design Guide: 07 42 00

## ***Frequently Asked Questions***

1. **Q: *What is SLENDERWALL<sup>®</sup>?***

**A:** It is a patented, lightweight, efficient, permanent, cladding, exterior wall system with extraordinary design flexibility that combines four proven design components: (1) architectural precast concrete; (2) hot-dipped galvanized welded wire fabric reinforcing steel; (3) epoxy-coated stainless-steel Nelson<sup>®</sup> anchors; and (4) heavy-gauge galvanized or stainless-steel studs.

2. **Q: *What are the advantages of SLENDERWALL<sup>®</sup> over other types of wall systems?***

**A:** There are five major **proprietary** benefits that come only with the *SLENDERWALL<sup>®</sup>* system: (1) Thermal break protection (*THERMAGUARD<sup>™</sup>*); (2) precast concrete isolated from the superstructure (*DURAFLEX 360<sup>o</sup><sup>™</sup>* technology); (3) secondary water-penetration protection (*H<sub>2</sub>Out<sup>™</sup>*); (4) fast panel installation (*Lift-and-Release<sup>™</sup>*); and (5) a “Class A” architectural precast concrete brick finish (*Second Nature<sup>™</sup>*).

3. **Q: *Who produces SLENDERWALL<sup>®</sup>?***

**A:** *SLENDERWALL<sup>®</sup>* is manufactured solely by certified, architectural, precast concrete producers who have received plant certification from either NPCA or PCI—the two premier associations in the precast industry—and who also are certified *SLENDERWALL<sup>®</sup>* licensees of EASI-SET<sup>®</sup> Industries.

4. **Q: *Where have SLENDERWALL<sup>®</sup> projects been built?***

**A:** There are more than 50 completed projects in 11 different states plus the District of Columbia (see *SECTION 2 of the Architectural Portfolio/Technical Design Guide*), and many new ones are underway.

5. **Q: *What is the standard size of a SLENDERWALL<sup>®</sup> panel?***

**A:** The average size is 8-feet by 30-feet; a typical size might be 10-feet by 30-feet.

6. **Q: *What’s the largest SLENDERWALL<sup>®</sup> panel I can design?***

**A:** The largest economical panel size is 10-feet by 35-feet. The panel size can be up to 13-feet by 40-feet but there could be significant additional shipping costs.

7. **Q: *What’s the tallest building that you have done?***

**A:** The tallest building is a 32-story condominium in New York City called “Marriott ExecuStay” located at 3<sup>rd</sup> Avenue and 37<sup>th</sup> Street. (See *Pages 2 & 3 of SECTION 2 of the Architectural Portfolio/Technical Design Guide*.)

8. **Q: *How competitive is SLENDERWALL<sup>®</sup> in cost compared to other cladding systems?***

**A:** Costs vary from region to region. *SLENDERWALL<sup>®</sup>* over the years has remained competitive with other types of cladding due to the lightweight and flexibility of design. One of the most important aspects of cost control is to design the façade with as many repeatable features as possible to keep both forming and labor costs low.

9. **Q: *What is the installed cost per square foot?***

**A:** Average costs are \$25.00 to \$40.00 per square foot installed, depending upon project location, complexity and design. However, the *SLENDERWALL<sup>®</sup>* system provides inherent project savings, which reduce the “effective” cost significantly.

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10. **Q: *What finishes can I use?***

**A:** All architectural precast industry finishes are available, including *Second Nature™ Architectural Precast Concrete Brick (APCB)*.

11. **Q: *What is Second Nature™ Architectural Precast Concrete Brick (APCB)?***

**A:** It is a *SLENDERWALL®* proprietary finish that is the only Class “A” precast concrete brick on the market with the quality level necessary for Class “A” commercial building projects.

12. **Q: *Can SLENDERWALL® be made in different colors?***

**A:** Yes, *SLENDERWALL®* can be colored either by staining or using pigmented concrete.

13. **Q: *What does a SLENDERWALL® panel weigh compared to a conventional precast panel?***

**A:** The weight is around 30 pounds per square foot; the average conventional precast panel weighs around 85 pounds per square foot, so a *SLENDERWALL®* panel is about one-third the weight of a conventional precast panel.

14. **Q: *Can SLENDERWALL® be used over existing structures?***

**A:** Yes, *SLENDERWALL®* can be used to re-clad existing structures. For maximum economy of installation, *EASI-SET®* recommends that the exterior of the existing structure be removed. *SLENDERWALL®* can be designed for installation over an existing structure from the outside so the building can remain occupied during the installation process. (See *SECTION 2 of the Architectural Portfolio/Technical Design Guide, pages 8 & 9, NJ Institute of Technology, for examples of this technique.*)

15. **Q: *Do you provide drawings?***

**A:** Yes. *EASI-SET®* Industries has certified engineering and design teams that are specially qualified for the *SLENDERWALL®* system.

16. **Q: *Are the drawings reviewed and stamped by an engineer?***

**A:** Yes, all *SLENDERWALL®* drawings are stamped by registered professional engineers.

17. **Q: *Has SLENDERWALL® been tested?***

**A:** Yes, *SLENDERWALL®* has passed rigorous testing by third party and independent labs, e.g.

- Consolidated Testing Lab (CTL): Steel-Stud Connection
- Architectural Testing, Inc. (ATI): 1998 Structural Test
- Architectural Testing, Inc. (ATI): 2002 Structural Test
- Architectural Testing, Inc. (ATI): Acoustical Test Report
- Western Fire Center, Inc. (WFCi): Fire Resistance Rating

Copies of the testing data are available upon request  
(also see *SECTION 4 of the Architectural Portfolio/Technical Design Guide*).

18. **Q: *What codes does SLENDERWALL® meet?***

**A:** *SLENDERWALL®* meets *IBC, ACI, AISC, PCI Design Handbook, CRSI Manual of Standard Practice, ASTM/ANSI/AWS*, and most local or state building codes.

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19. **Q: *Do I need any permits?***  
**A:** Permits may be required as with all building and construction projects. Consult your local building and zoning office for the requirements for your project.
20. **Q: *What is the dead load of the SLENDERWALL<sup>®</sup> panel?***  
**A:** 30 psf.
21. **Q: *Can SLENDERWALL<sup>®</sup> be designed in load-bearing wall applications?***  
**A:** SLENDERWALL<sup>®</sup> panels can be load bearing if so designed.
22. **Q: *What is the wind loading?***  
**A:** SLENDERWALL<sup>®</sup> panels can be designed to accommodate any level of wind as per IBC requirements. Typical loading may be 120 psf.
23. **Q: *What is the fire rating?***  
**A:** With *six-inches* of insulation and one layer of *5/8-inch* gypsum fireboard, SLENDERWALL<sup>®</sup> is rated for 74 minutes. A copy of the fire-rating letter is available upon request.
24. **Q: *Can SLENDERWALL<sup>®</sup> be a fire-rated wall?***  
**A:** With the proper fireproof insulation and the appropriate fireboard backing attached to the frame, SLENDERWALL<sup>®</sup> can be made to reach the ratings required by codes for firewalls.
25. **Q: *How is the fire-stop between floors handled?***  
**A:** There are two recommended companies with certified procedures for 2-hour-rating fire-stop methods for SLENDERWALL<sup>®</sup>: the Hilti Company and STI, Inc. The procedures for both are available upon request.
26. **Q: *How is the gap between the floor and panel plugged?***  
**A:** There is a piece of light-gauge break metal provided and installed by the drywall contractor during the installation of the drywall.
27. **Q: *Can you provide quotations from hand-drawn sketches?***  
**A:** Budget numbers can be given on basic concepts and sketches; however, to provide hard quotes and estimates, full drawings with sections and elevations are **necessary and required**.
28. **Q: *How long does it take to get a price?***  
**A:** Most preliminary estimates and reviews of the project take about a week, depending on production and schedules. EASI-SET<sup>®</sup> Industries will strive to work within your time frame to provide thorough estimates on a timely basis.
29. **Q: *What is the time frame for production, delivery and installation?***  
**A:** Production of an average project (40,000 square feet of exterior cladding) is approximately 12 weeks after start of shop drawings; delivery of SLENDERWALL<sup>®</sup> to the project site begins once 80% of the project is produced; installation is usually completed approximately 6 to 8 weeks from installation start.

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30. **Q: *How do you deliver the panels?***  
**A:** Panels are delivered to the project on trailers in the order of installation requested.
31. **Q: *Who installs the SLENDERWALL<sup>®</sup> panels?***  
**A:** *SLENDERWALL<sup>®</sup>* is installed by PCI-qualified (Precast/Prestressed Concrete Institute) erectors, or those who have a minimum of 5 years experience installing *SLENDERWALL<sup>®</sup>* architectural precast concrete panels.
32. **Q: *How is SLENDERWALL<sup>®</sup> attached to the building?***  
**A:** *SLENDERWALL<sup>®</sup>* is attached to the building perimeter by gravity and lateral connections at the floor slab or steel/concrete frame. (For more information, see SECTION 3.01 of this Technical Design Guide, Drawing Details S-1 through S-20.)
33. **Q: *How is the frame attached to the 2-inch architectural precast?***  
**A:** The frame is attached to the concrete using an epoxy-coated, headed stainless-steel Nelson<sup>®</sup> anchor that is welded to the frame and embedded in the concrete, allowing a 1/2-inch air gap. This is a proprietary system called THERMAGUARD<sup>™</sup> and is one of the major benefits exclusive to the *SLENDERWALL<sup>®</sup>* system.
34. **Q: *What is the purpose of the air gap between the frame and back of concrete?***  
**A:** To provide a further thermal break from the exterior to the interior of the building.
35. **Q: *What is the gauge of the frame and track?***  
**A:** The stud is 16-gauge steel and the track is 14-gauge.
36. **Q: *How thick is the galvanizing?***  
**A:** Both are G90 galvanized.
37. **Q: *How does SLENDERWALL<sup>®</sup> connect to other wall systems?***  
**A:** *SLENDERWALL<sup>®</sup>* is compatible with most other types of systems made from metal, brick, and glass and is connected using expansion joints.
38. **Q: *Can SLENDERWALL<sup>®</sup> span from floor to floor?***  
**A:** Yes, it can be designed to span from floor to floor.
39. **Q: *How large can window openings be?***  
**A:** Openings in the *SLENDERWALL<sup>®</sup>* panel can be designed to fit most standard and custom window sizes available from window manufactures. Standard *SLENDERWALL<sup>®</sup>* panels can accommodate windows up to 7-feet wide.
40. **Q: *How are windows attached to the panel system?***  
**A:** Openings in the *SLENDERWALL<sup>®</sup>* panel are provided and the windows are attached using shims and screws to the *SLENDERWALL<sup>®</sup>* framing.
41. **Q: *Can windows be installed in the plant?***  
**A:** Yes. However, a long lead-time is required for the delivery of the windows; therefore, selection of the windows has to be made by the architect in advance of *SLENDERWALL<sup>®</sup>* production and delivery. (They are properly protected to prevent damage during shipping.)

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42. **Q: How deep can the reveals be in a panel?**  
**A:** The recommended depth of the reveals is *3/8-inch*.
43. **Q: How large can a projection be on the panel?**  
**A:** The maximum recommended projection is *6-inches* deep. (See Drawing Details **A-1** and **A-7** in SECTION 3.01 of this Technical Design Guide.)
44. **Q: Do you provide openings for the HVAC units?**  
**A:** Yes. Consult EASI-SET® Industries for maximum size openings and locations for your particular project needs.
45. **Q: How do you seal between the panels?**  
**A:** Weatherproofing the *SLENDERWALL®* system is handled by caulking contractors that use the most up-to-date sealants on the market.
46. **Q: How do you seal the roof panels?**  
**A:** The roof panels are tied to the roof by the roofing membrane provided by the roofing contractor. Design of the connection to the roof membrane is dependant upon the type and style of the panel that you choose for your project. (See Drawing Detail **A-4** in SECTION 3.01 of this Technical Design Guide for different roofing details.)
47. **Q: Can SLENDERWALL® be made to cantilever past a floor or roof?**  
**A:** Yes. See the *SLENDERWALL®* Drawing Detail **A-4** in SECTION 3.01 of this Technical Design Guide for different types of panels and roof connections.
48. **Q: Can handrails and screens be attached to the SLENDERWALL® panels?**  
**A:** Yes; however, prior to attaching the screens or handrails to *SLENDERWALL®* panels, the design must be approved by the structural engineer and the *SLENDERWALL®* design team.
49. **Q: What loads can be applied to the SLENDERWALL® panel for canopies and awnings?**  
**A:** Only minimal loads can be applied to the *SLENDERWALL®* panel itself. Larger loads must be transferred to the structure by penetrating the *SLENDERWALL®* panel and attaching to the building superstructure. Consult your EASI-SET® design team for specific help on your project.
50. **Q: Can SLENDERWALL® be used as a screen wall on top of a building?**  
**A:** Yes; but when used in this application, the back of the *SLENDERWALL®* panel must be protected from the elements either by sealing with a stain or waterproof coating or by applying a weather-tight sheathing on the back of the frame.
51. **Q: Does SLENDERWALL® have to be enclosed on the back to be used as a screen wall?**  
**A:** Yes, the *SLENDERWALL®* panel is made of components that are susceptible to the elements and they have to be protected by coatings or by enclosures. There is also the option of using stainless steel framing and stainless steel connection hardware that is weather resistant.
52. **Q: Can the panels be used on a parking garage?**  
**A:** Yes; however, *SLENDERWALL®* panels have not been designed for vehicle impact at this time. Therefore, cables or curbs would have to be in place in front of (before) the panels.

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**53. Q: *How do you handle water penetration?***

**A:** *SLENDERWALL*<sup>®</sup> resists water penetration by use of the face-seal method, accomplished by completely sealing the exposed face. The concrete mix incorporates an integral concrete admixture which reduces the capillary properties of the concrete, providing a dense concrete mix that repels water.

**54. Q: *Is there a vapor barrier?***

**A:** Vapor barriers can be applied as recommended by the HVAC mechanical engineer based on local climate conditions.

**55. Q: *Where are vapor barriers applied?***

**A:** They can be applied to the heated side of the *SLENDERWALL*<sup>®</sup> panels on the northeast side of the building between the frame and the concrete.

**56. Q: *What is the R-value?***

**A:** The R-value of the *SLENDERWALL*<sup>®</sup> panel when assembled with *6-inches* of bat insulation and drywall is R-21.

**57. Q: *What is the life of SLENDERWALL*<sup>®</sup>?**

**A:** *SLENDERWALL*<sup>®</sup> is made from components that have a 50- to 100-year history and a proven track record in the construction industry.

**58. Q: *What is the warranty?***

**A:** The manufacturer of the *SLENDERWALL*<sup>®</sup> product warrants that the *SLENDERWALL*<sup>®</sup> panels are made free of defects from materials and workmanship for a period of one year.