

NOVAWALL FORM STRETCHED FABRIC ACOUSTIC CEILING CLOUDS, BAFFLES AND BANNERS

Note: This specification is published as a service to architects and designers and is intended to be used as a guideline for preparing a project specific specification section.

Every heading may not be needed. Delete headings not used and renumber remaining used headings to be numerically in order. Brackets [] and sequential paragraphs with the same number indicate options.

PART 1 GENERAL

1.01 SUMMARY

Note: Edit listings below as necessary to reflect project requirements. List significant generic types of products, work, or requirements specified. This listing should not include procedure, process, preparatory work, or final adjusting and cleaning.

- A. Section Includes:
1. Stretched fabric acoustic ceiling panels and baffles
 2. Exposed grid suspension system
 3. Wire Hangers, Gripple suspension,
 4. Acoustical core materials
 5. Fabric facing
 6. Fabric treatments

Note: Edit listings below as necessary to reflect project requirements. List statements drawing reader's attention to other specification sections dealing with work directly related to this section. Listing should be limited to other sections with specific requirements pertaining to this work.

- B. Related Sections:
1. Section 09 51 00 Acoustical Ceilings
 2. Section 09 51 13 Acoustical Fabric-Faced Panel Ceilings
 3. Section 09 53 00 Acoustical Ceiling Suspension Assemblies
 4. Section 09 20 00 Plaster and Gypsum Board
 5. Section 09 21 16 Gypsum Board Assemblies
 6. Division 23 HVAC Air Distribution
 7. Division 26 Electrical

1.02 REFERENCES

Note: List standards referenced in the section, complete with designations and titles. Standards and associations or industry standards should be identified here and referenced in other articles of this section by their acronym and alpha/numeric designation only. This article does not require compliance with standards, but is merely a listing of those used.

- A. Publications listed herein are part of this specification to extent referenced.

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

- B. American Society for Testing and Materials:
 - 1. ASTM C423 Test Method for Sound Absorption and Sound Absorption Coefficients by Reverberation Room Method
 - 2. ASTM E84 Test Methods for Surface Burning Characteristics of Building Materials

1.03 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Novawall form stretched fabric acoustic panel system shall consist of continuous perimeter extrusions intended to be suspended from ceiling or deck above. These may have a portion of the installation that is site fabricated.
 - 2. Facing fabric shall be stretched over framework, leaving fabric floating above core surface. Fabric facing application shall not utilize adhesives, nails, tacks, screws, or tapes. Nails, tacks, screws or similar items shall not be installed through facing fabric to secure to panel framework.
 - 3. System shall allow for removal and replacement of fabric facing from individual panels. Removal from suspension cables required to remove and replace fabric.
 - 4. Hinged, self-locking (snap-lock) type mounting extrusions and extrusions using tape to adhere fabrics do not satisfy intent of this specification.

1.04 SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's literature describing system to be provided.
- B. Shop Drawings:
 - 1. Submit scaled shop drawings showing general layout, jointing, anchoring sizes and types, shapes, thickness, and other similar detailed information necessary to fully describe installation.
 - 2. Reflected ceiling plans and elevations shall indicate arrangement of panels. Clearly indicate locations of panels, panel shapes, locations of Gripple Suspension lines, anchorage points and intersections with other ceiling installations of lighting, ductwork, cabling, plumbing, etc.
 - 3. Shop drawings shall be of sufficient detail and scale to determine compliance with design intent. Scales shall generally be as follows:
 - a. Key Plans: 1/8" = 1'-0"
 - b. Elevations: 1/2" = 1'-0"
 - c. Plan Sections: 3" = 1'-0"
 - d. Details: Full size or 3" = 1'-0"

09 54 43-2

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

C. Samples:

1. Submit electronic samples and as follows:
 - a. Each type mounting extrusion
 - b. Each type fabric facing
 - c. Each type core material and/or substrate structure

Note: For smaller scope projects, the mounted samples may not be necessary.

- [2. Submit sample of stretched fabric panel system, demonstrating typical conditions of product. Sample size shall be large enough to demonstrate typical and special conditions, typically 12" x 12".]

Note: For larger scope projects, the following sample should be considered.

- [3. If larger projects require, at a location designated by Architect for review, construct a full size sample panel incorporating specified fabrics and shape as required by Architect.]

D. Quality Assurance Submittals:

1. Manufacturer's Instructions:
 - a. Submit manufacturer's summary of installation procedures which shall be basis for accepting or rejecting actual installation procedures.
2. Test Reports: **This fire code section is considered MANDATORY. Stretched fabric panel systems or fabrics not in compliance should be rejected.**
 - a. Submit complete, unedited test reports for stretched fabric panel system prepared by an independent testing laboratory that is IAS Certified indicating full compliance with both acoustical and fire resistance performance requirements.
 - 1) **Systems must be certified under ASTM E84 and Class A:**
Class A - Flame Spread Index (0-25)
Class B - Flame Spread Index (26 - 75)
Class C - Flame Spread Index (76 - 200)
Smoke Developed Index (0-450) for all Classes A, B or C.
 - b. Submit complete test reports for fabric covering prepared by an independent testing laboratory that is IAS Certified indicating compliance with specified fire resistance performance requirements ASTM E84 Unadhered Method.
3. Certificates:
 - a. Provide certification from manufacturer of stretched fabric panel system attesting to their product's compliance with specified requirements including mandatory fire performance characteristics under ASTM E84.
 - b. Provide certification that specialized equipment as may be

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

required by manufacturer for proper installation of system shall be utilized.

- c. Provide certification that technicians utilized for installation have been trained or qualified by manufacturer.

Note: *For smaller scope projects, this listing may not be necessary.*

- [d. Submit listing of not less than 5 of installer's most recent installations representing similar scope and complexity to Project requirements. Listing shall include information as follows:

- 1) Project name and address
- 2) Name of owner
- 3) Name and phone number of contractor
- 4) Name and phone number of architect
- 5) Date of completion]

F. Contract Close-out Submittals:

Note: *In the event of soiling or serious damage to the fabric facing material, cleaning other than gentle brushing should not be attempted by the owner.*

1. Submit procedures to be followed in cleaning and maintaining stretched fabric panels. Include a copy of instruction in Operation and Maintenance Data Manual.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installer shall be trained, or qualified by manufacturer in installation techniques and procedures of stretched fabric panel system and shall demonstrate a minimum of 3 years successful experience in such installation. Installer shall employ, on Project, mechanics with a minimum of 2 years documented experience.
2. Single Source Responsibility:
 - a. To greatest extent possible, materials shall be products of a single manufacturer or items standard with manufacturer of stretched fabric panel system.
 - b. Provide secondary materials which are produced, or are specifically recommended by stretched fabric panel system manufacturer to ensure compatibility.

B. Field Samples:

Note: *It is important to establish standards by which the work will be judged. Review of the first finished*

09 54 43-4

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

elevation allows for adjustments to be made before all work has been installed. This is especially critical when fabric facings with patterns and repeats have been selected.

1. Request a review of first finished elevation of each fabric facing for workmanship.
2. Revise as necessary to secure Architects acceptance. Accepted field samples shall be used as datum for comparison with remainder of work of this Section for purposes of acceptance or rejection.
3. Accepted field samples may be included in finished Work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Packing, Shipping, Handling, and Unloading:
 1. Deliver materials in manufacturer's original unopened packaging.
- B. Acceptance of Fabric Facing:
 1. Remove wrapping.
 2. Fabric facings shall be unwrapped and inspected upon arrival for flaws and defects. Notify Fabric Manufacturer within at least 24 hours of inspection, should flaws and defects exist.
 3. Fabric that is flawed by inclusion of excessive mis-weaves, poor color match with goods specified, water damage, inadequate continuous drops without seaming, or other unacceptable conditions, shall be rejected. Coordinate with manufacturer.
- C. Storage and Protection:
 1. Store materials in a clean area, free from dust and damage from construction activities.
 2. Do not store fabric in bolts in an upright position, or beneath other materials.
 3. Cover materials with plastic in a manner to provide air circulation.
 4. Remove damaged, defective, or rejected materials.

1.07 PROJECT CONDITIONS

- A. Environmental Requirements:

Note: *Fabric performance in stretched fabric systems may be affected by changes in temperature and humidity. In applications, regardless of how severely tensioned, relative humidity or temperature changes can cause the fabric yarns to expand and contract as they absorb and release moisture. This phenomenon is called cycling.*

1. Maintain ambient temperature and humidity within spaces to receive Novawall form stretched fabric panel system at levels indicated for final acceptance. Levels shall be maintained continuously from at least 48 hours prior to installation, until space is turned over to Owner.
2. Provide an illumination level of not less than 80 foot-candles measured at mid-height of substrate surface. Project lighting shall be installed and

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

functioning.

- B. Field Measurements:
 - 1. Verify field dimensions prior to fabrication and installation. Installer shall be responsible for details and dimensions not controlled by job conditions and shall indicate, on shop drawings, field measurements beyond his control. Contractor and installer shall cooperate to establish and maintain these field conditions and required dimensions.
 - 2. Measure each area and establish layout of panels to balance [borders] [widths] at opposite edges of each wall.
 - 3. Coordinate all interfacing trades involved in above ceiling mountings of plumbing, lighting, ductwork, cabling, etc. that may impact ceiling anchorage, panel layout or dimensional issues either by code or by design.

1.08 SEQUENCING AND SCHEDULING

- A. Schedule installation of Novawall form stretched fabric system as late as possible in sequence of construction schedule to reduce damage.
 - 1. Do not install Novawall form stretched fabric system until space is enclosed, weather tight and conditioned.
 - 2. Under no circumstances shall installation begin prior to completion of abutting adjacent finishes that affect installation or dimensional issues, including paint or other ceiling trades.
 - 3. No wet work shall remain with exception of touchup.

1.09 LIMITED LIFETIME WARRANTY*

- A. Stretched fabric panel system installation shall be warranted by the Authorized Distributor or Certified Installer for the period defined in contract documents.
- B. Novawall® provides a **Limited Lifetime Warranty*** to the Authorized Distributor or Certified Installer for the "Life" of the installation.

*Novawall® will provide replacement Novawall® extrusions that are deemed defective at no charge to the Authorized Distributor or Certified Installer during the "useable life" of an installation. Novawall® does not warranty against damage by others, normal wear and tear, the project installation, fabric or core materials which may have certain other manufacturer warranties.

[1.10 MAINTENANCE

- A. Extra Materials:
 - 1. Provide additional stock of [10%] of fabric of same dye lot to Owner for storage upon completion of installation.]

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER/AUTHORIZED DISTRIBUTOR/CERTIFIED INSTALLER

- A. **Novawall form:** **NOVAWALL® Systems, Inc.**
885-B South Picket Street
Alexandria, Virginia 22304
Telephone 800-695-6682
703 461 0113
Facsimile 703 461 0436
email: sales@NOVAWALL.com
website: www.NOVAWALL.com
- B. **Authorized Distributor or Certified Installer:**
(territory map at www.novawall.com or consult with a Novawall® representative.)
- C. Substitutions:
1. Unless otherwise provided in Contract Documents, a proposed substitution shall be submitted to Architect not later than 10 days prior to date established for receipt of Bid.
 2. Architect shall determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing. Proposed substitutions accepted for use on this Project by Architect shall be set forth by addenda.

Note: *When considering substitutions, it is important to see actual, physical samples of the system being proposed for comparison to NOVAWALL®. Samples should demonstrate their ability to comply with all specified requirements.*

3. Requests for substitution shall include a mock-up panel, which incorporates specified fabric[s], not less than 18" x 18" in size along with documentation consisting of complete product data, certified test reports from an IAS certified facility, and comparative analysis substantiating compliance of proposed substitution with Contract Documents.
4. Wherever a proposed substitution involves changes or modifications to elements of Project, submit drawings showing changes and modifications made necessary by proposed substitution.
5. Proposed substitution shall meet, or exceed, requirements of this specification including, but not limited to, items as follows:
 - a. Acoustical performance
 - b. Fire resistance performance under ASTM E84
 - c. Core material composition
 - d. Panel size and design
6. Requests for substitution constitute a representation that Contractor:
 - a. Has personally investigated proposed substitute product and

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

- determined it is equal or superior in all respects to specified product;
 - b. Will provide same warranty for substitution as for specified product;
 - c. Waives claims for additional costs related to substitution which subsequently become apparent; and
 - d. Will coordinate installation substitute if accepted, making such changes as may be required for Work to be complete in all respects.
7. Requests for substitution which do not provide adequate data for evaluation by Architect will not be considered. Products will not be considered when they are indicated or implied on shop drawings or product data submittals without separate written request.

2.02 MATERIALS

- A. Novawall form Stretched Fabric Panel Ceiling System:
- 1. Panel Size and Thickness: As indicated on Drawings
Made to order in Custom Sizes

Note: Refer to NOVAWALL® product catalog for more information on available edge profiles as well as midwall configurations. Use Square Edge Profiles with Butt joint Midwall and all Reveal MidWall components. Use Bevel and Radius Edge Profiles with respective Bevel and Radius Midwall components. Contact NOVAWALL® (800-695-6682) or your local representative for additional information on compatibility. Specify Edge profile and Midwall profile desired.

- 2. **Framework:**
 - a. Extruded VT Aluminum – 1 ½" Thick
 - b. Fire Rated MDF - 1 ½" – 2 ½" Thick
- 3. **Edge Profile:**
[1"Square-Classic] [1/2"Square-Classic]
- 4. **Midwall Profile (may be required for MDF structures)**
[1"Square] [1/2"Square]

Note: When acoustical requirements are the basis for the design, the use of the space may necessitate involving an acoustician to assist in determining exact project requirements.

- 5. **Acoustical Core Material:** Semi-rigid fiberglass board
 - a. Density: [6 pcf.]

Note: Core density of 6 pcf is standard. Specialized cores (single and multiple layer)

may be used with the NOVAWALL® system

- b. Thickness (specify one): [$\frac{1}{2}$ " [1"] nominal
 - c. Noise Reduction Coefficient; determined by ASTM C423 Type A Mounting:
 - [1] $\frac{1}{2}$ " thickness: .50 minimum]
 - [2] 1" thickness: .75 minimum]
 - [3] 2" thickness: .95 minimum]
 - [4] 4" thickness: 1.05 minimum]
 - d. J Mount Absorption Coefficients available on website
7. **Fire Resistance: Mandatory compliance Class A ASTM E84.**
- a. Complete panel assembly, including perimeter framework, mounting devices, core, and fabric shall have a certificate from an independent IAS Certified testing facility indicating compliance for Flame Spread and Smoke Developed under ASTM E84.
 - 1) **Flame Spread:** **Class A (0 -25)**
 Class B (26 – 75)
 Class C (76 – 200)
 - 2) **Smoke Developed: Not to exceed 450**
8. **Product: NOVAWALL®**

B. Fabric Facing (Indicate for each fabric specified):

1. Source

FP-1[Manufacturer] [Fabric Name] [Style Number] [Color] [Width]
FP-2[Manufacturer] [Fabric Name] [Style Number] [Color] [Width]

Note: Fabrics selected for use must meet Class A requirements per ASTM E84 Unadhered Method (NFPA 255). Some fabrics manufacturers believe that a fabric which has been tested to comply with NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films also meets the requirements for ASTM E84 Unadhered Method (NFPA 255). This is not true. Fabrics which comply with NFPA 701 alone do not automatically comply with the requirements found in ASTM E84Unadhered Method (NFPA 255).

Note: Involving a NOVAWALL® representative early in the design process will assure the greatest flexibility in design choices which meet acoustical performance as well as aesthetic objectives of the project. NOVAWALL® has developed a database of fabrics used in installations across the country to help identify situations and conditions before they become problems during installation.

Note: NOVAWALL® has one private label fabric line of its own called Novaspan, Novawall Systems Inc. has no vested interest in the selection of fabrics, except to assist the design professional in selecting a range of fabrics that will satisfy the specific project requirements. NOVAWALL® works closely with the major contract fabric lines to keep abreast of new fabrics as they are released to the design community.

2. Fabric Content

Note: *The fiber content of fabrics determines how fabrics react to their environment. Fabrics containing high percentages (greater than 20%) of rayon, nylon or viscose are usually not well suited to stretched fabric panel applications. Fiber contents which have a polyester content exceeding 10% will tend to resist yarn cycling with normal changes in relative humidity and are excellent choices for NOVAWALL®. Generally, fabrics with natural fiber content (e.g. cotton, wool, silk) will generally require the application of an acrylic or knit backing to help stabilize the fabric. Silks and other luxury textiles may need a lining system. Linings may also be required with light colored or sheer fabric selections whose appearance may be affected by the core material and mounting extrusions over which they are applied.*

3. Treatments or Backings

Note: *With the large variety of fabrics commercially available from which to choose, some may require special treatments or installation techniques that may have cost implications and require longer lead times. Backings may be required to maintain the textiles stability or body or the period of the installation.*

2.03 FABRICATION

A. Fabric Treatment:

1. Provide fabric with single pass, upholstery grade light acrylic backing when required for proper installation. Other backings shall not be used without written approval from Novawall form stretched fabric panel system manufacturer.
2. Provide liner when required to ensure uniform appearance of face fabric.
- [3. Fabric facings not treated when manufactured shall be treated with Teflon guard protective finish to enhance fabric's stain resistance.]
- [4. Shop applied fabric treatments without affecting flame retardant requirements, appearance, color, or hand of fabric.]

B. Fabric Flame Treatment: If a fabric is considered for panel application and requires a flame treatment application;

Note: *Flame retardant treatments of commercially manufactured panel fabrics, is generally not required. It is mandatory by all Building Codes that fabrics for use on panels, as manufactured for that end use, have been tested under ASTM E84 Unadhered Method, by an independent IAS Certified testing facility.*

1. The fabric should be evaluated by an Authorized Distributor, Certified Installer or Novawall representative for its fiber content and appropriateness for panel application. Does the fabric manufacturer warrant the fabric weave or content for the intended use on stretched fabric panels?
2. It is mandatory that it also be tested under ASTM E84 Unadhered Method by an independent IAS Certified facility, after flame treatment.
3. Documentation by certification must be provided by the IAS Certified testing facility indicating, the textile or fabric tested, by Manufacturer Name, Product Style Name and/or Number and must include flame treatment type applied by treatment facility.
4. A copy of the original certificate from the IAS Certified testing facility

must be provided to the Authorized Distributor for project record documents and for local Fire Marshall review.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Examine mounting substrates and spaces in which work is to be performed.
 - 2. Do not begin installation until:
 - a. Space has been enclosed and is weather-tight
 - b. Wet work has been completed and is dry
 - c. Painting is completed.
 - d. Adjacent work of other trades such as plumbing, ductwork, lighting, cabling, etc. have been completed
 - 3. Do not proceed with installation until unsatisfactory conditions have been corrected. Beginning of installation indicates acceptance of existing substrate conditions.

3.02 INSTALLATION

- A. General Requirements:
 - 1. Panel edges shall abut adjacent finishes or surfaces or to conform to adjacent joint conditions without reveals or gaps unless required by design.
 - 2. Visible surfaces shall be fully covered and free from wrinkles, sags, blisters, and foreign matter.
 - 3. Panel joints shall be tight, straight, true, plumb, and in proper relation to building lines without ripples, waviness, and "hourglass" effects.
 - 4. Seaming of fabric by sewing shall not be allowed.

- B. Framework:
 - 1. Install framework in strict compliance with shop drawings and manufacturer's instructions.
 - 2. Framework shall be installed around perimeter of each panel area. To greatest extent possible, install members in continuous lengths.
 - 3. Install framework shimmed, plumbed, and scribed to align with adjacent surfaces. Attach in a manner to prevent sagging or moving out of position after fabric has been stretched tightly. Framework members shall not telescope through face of fabric.
 - 4. Secure framework to wall surface using pneumatically driven 18 gauge staples with a diverging head to form divergent-tine wall anchors

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

spaced at 2-3" on center.

5. Provide framework flush with face of panel around outlet boxes, duplex receptacles, thermostats, etc., which may occur within fabric panel area.

C. Core Materials:

1. Materials shall be installed in a continuous manner, flush and level with framework. Material shall be tight to the framework at all points.
2. Materials shall be installed using a suitable method of mechanical fastening. Adhesives are not to be acceptable for use when installing core materials to substrate.

D. Fabric Facing:

1. Cut fabric from each roll maintaining sequence of drops and matching direction of weave for sequential and uniform installation.
2. Install fabric with warp and weft threads plumb, level, and true. Patterns, textures, and grain of fabric shall be aligned and matched at seams. Throughout entire seam, join wall panels without distortion to geometry of fabric or pattern.
3. Fabric shall be stretched, re-stretched, and tensioned over framework and left to atmospherically cure for a minimum of 24 hours between stretchings until sufficiently taught to avoid sagging under varying year-round temperature and humidity conditions.
4. Installed fabric shall be stretched taut so as not to puddle or dent when touched or leaned upon. Fabric shall be self-healing when pushed, punched, or hit, and shall revert back to original finished condition.
5. Fabric shall be applied securely to grounds using a hand tool appropriate for joint condition and nature of fabric. No nailing, tacking, stapling, adhesive taping, or gluing of fabric shall be permitted. Ensure that fabric surface is free of wrinkles and that weave is plumb and straight and properly aligned horizontally and vertically.
- [6. Fabric shall be installed as monolithic stretched fabric in continuous runs without reveals.]

OR

- [6. Fabric shall be installed as butt joined panels on walls as indicated on Drawings, [with] [without] reveals.]

E. Site Tolerances:

1. Maximum variation of panels from true location shall be $\pm 1/8"$.
2. Maximum variation of surfaces intended to be flush shall be $\pm 1/16"$.
3. Maximum variation of reveal width shall be $\pm 1/16"$.

3.04 CLEANING

09 54 43-12

SECTION 09 54 43 STRETCHED-FABRIC ACOUSTIC CEILING SYSTEMS

- A. Clean exposed surfaces of wall fabric. Trim and remove loose threads.
- B. Remove surplus materials, rubbish and debris, leaving area in a neat and clean condition.

3.05 PROTECTION

- A. Cover fabric installation with new, clean vinyl sheeting to protect as necessary.

END OF SECTION