SECTION 09 54 43 – stretched membrane ceiling system

1. General
   1. Summary
      1. This Section includes supply and install of stretched membrane ceiling systems complete with accessories for interior installation area as listed on Drawings.
      2. Related Section:
         1. Section 09 29 00 – Gypsum Board.
   2. Reference Standards
      1. Underwriters Laboratories Canada (ULC):
         1. CAN/ULC S102‑03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
         2. CAN/ULC S109.
   3. Submittals
      1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
      2. Product Data: Shall be clearly marked to indicate all technical information which specifies full compliance with requirements of this Section, Contract Documents, and the manufacturers’ published installation recommendations, including but not limited to the following: samples and printed materials.
      3. Dealer Certification: Submit in writing the manufacturers’ certification.
      4. Shop drawings for stretched membrane ceilings shall be prepared and submitted for review to the Consultant in accordance with Section 01 33 00 – Submittal Procedures.
      5. Shop drawings shall show construction details for all stretched membrane ceilings and general arrangements; typical and special installation conditions; materials being supplied and all connections, attachments, locations, anchorage, and location of fastenings, as applicable.
      6. Shop drawings shall incorporate plans, elevation, sections, and details for all stretched membrane ceilings. The details shall show and specify all types and finishes of all members.
      7. No work shall be fabricated until the shop drawings have been reviewed and all other related submittals and samples as required by the specifications, have been approved by the Consultant.
      8. Warranty: Submit manufacturers’ limited warranty against defects in product, harpoon welds, sheet welds and colour fastness for a period of two years and workmanship for a period of ten years.
      9. Samples for Initial Selection Purpose: Submit samples of all standard colours and finishes for membranes and rails.
      10. Samples for Verification Purpose: Submit 15 cm square samples of each type and colour of membrane and rail specified.
      11. Certified Test Reports: Submit test data from an independent testing agency, acceptable to authorities having jurisdiction, evidencing that ceiling assembly comply with requirements indicated for fire performance characteristics.
   4. Quality Assurance
      1. The work of this section shall be performed by a company which specializes in the type of stretched ceiling system required by this project, with a minimum of 5 years documented successful experience and shall be performed by skilled workmen thoroughly trained in the necessary craft. Work shall be performed in compliance with Owner’s insurance underwriters’ requirements and UL Approvals and Testing for materials, assemblies and procedures.
      2. The membrane shall be stretched over the subsurface and hooked into rails without glue or clips.
      3. The stretch ceiling membrane shall be removable by hand and approved tools for visible inspection, to provide access above the stretched membrane, and to provide for subsequent re-installation.
      4. The membrane shall not be less than 17/100 mm thick and shall not have a weight of more than 20g per square foot for all finishes except as otherwise indicated by membrane manufacturer (i.e. Brushed Suede & some Perforated).
      5. Brushed Suede membrane shall not be less than 35/100 mm thick and shall not have a weight of more than 35g per square foot.
      6. The width of sheeting between two factory welds shall not be less than 1.62m.
      7. All membranes/sheets shall be washable except Brushed Suede.
   5. project Conditions
      1. Do not begin installation until spaces to receive stretched ceilings have been enclosed, sufficient heat is provided, dust-generating activities have terminated, and overhead mechanical and electrical work is completed, tested, and approved.
      2. Permit wet work to dry prior to the beginning of installation.
      3. Maintain uniform temperatures and humidity prior to, during and after installation.
      4. The ceiling cavity must be airtight.
      5. If a ventilation system is used, air intakes and outlets must have the right dimensions to be correctly balanced.
   6. COORDINATION
      1. Co-ordinate layout and installation of ceiling system with other construction that penetrates the ceiling or is supported by them, including light fixtures, HVAC, fire suppression system, and partition assemblies.
   7. STORAGE AND HANDLING
      1. Store all materials off the ground and protected from dirt and dust of construction operations.
      2. Materials are to be acclimated to installation condition for 48 hours prior to installations.
      3. Handle all materials in a manner that will protect them from damage.
2. Products
   1. acceptable manufacturers
      1. Stretch membrane ceiling as manufactured by Newmat (FW-1) Refer to Section 09 06 05 – Product and Finish Schedule for more information.
   2. components
      1. Stretch PVC (polyvinyl chloride base, guaranteed cadmium free) membrane-ceiling sheet: A ceiling membrane will be custom produced according to exact field measurements. The membrane will be connected together by factory welds to achieve the appropriate size. All NEWMATNEWMAT stretched ceilings are certified Phthalates-Free.
      2. Finish: Blanc L101.
      3. Harpoon: A semi-rigid PVC harpoon (depending on rail type selected) is welded at the factory onto the perimeter of the ceiling membrane. Specify harpoon to be white or black.
      4. Seams / Welds: Lapped and factory welded. Location as indicated by the Consultant.
      5. Visible and concealed rails: Anodized aluminum Newmat-Star. Rails, Separators, Curved Rails, Curved Separators, and steel Reinforcing Braces shall be shop fabricated.
      6. Rings: Reinforcement rings in Class A PVC available in the shape and size to fit light fixtures, sprinkler heads, HVAC. Smoke detectors, etc.
      7. Acoustical Materials: installed above the stretched membrane ceiling but not on it. This acoustical material must meet the requirements of the acoustical specialist and comply with the requirements of the Contract Documents.
      8. Acoustical Newmat: Newmat ceiling to be acoustical micro-perforation version.
3. Execution
   1. EXAMINATION
      1. Install stretch membrane ceiling system in accordance with approved submittals, reflected ceiling plan in Drawings, manufacturer’s published recommendations and Contract Documents.
      2. Examine the requirements of the installation site and the conditions. Notify the Contractor or Consultant in writing of any unsatisfactory conditions. Do not proceed with the work until such conditions have been corrected in a manner satisfactory to installers.
      3. Survey the installation site for exact field measurements for custom production of the ceiling membrane. Take actual field measurements for each ceiling.
      4. Inspect each space that is about to receive wall fixed mounted rails. The surface where the rails will be fixed must be smooth, flat, and finished prior to installation of the rails.
      5. Stretched membrane ceiling should only be installed if the wet work is completed and dry, the space is enclosed and weather tight, all painting and wall covering is completed and dry, the work of other trades is completed included electrical work, sprinkler systems, HVAC, etc.
   2. INSTALLATION
      1. Field measures each space to receive a stretch ceiling.
      2. Fasten the rails at the perimeter of each ceiling using miter cut corners and the appropriate fixing technique for each type of surface as recommended by manufacturer.
      3. Heat the ceiling membrane to release the sheet for installation purposes.
      4. Extend the membrane is completely secured, the heating source will be removed to allow the membrane to recover to its designated size, free of wrinkles.
      5. After the membrane is completely secured, the heating source will be removed to allow the membrane to recover to its designated size, free of wrinkles.
      6. Make all required penetrations for lights. HVAC, sprinkler systems, etc. and secure the opening with a reinforcement ring or square using the appropriate technique for each item as recommended by manufacturer.
   3. CLEANING
      1. Clean the complete ceiling installation and adjoining construction as required.
      2. Provide a written recommendation for cleaning and maintenance procedure including a list of approved cleaning products.
   4. PROTECTION
      1. The Contractor is responsible for protecting the stretched membrane ceilings from damage from other trades.

END OF SECTION