ARCHITECTURAL MANUAL

2001 COMPANY

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CHAPTER 7

SBS SPECIFICATIONS

Architectural Guide Specification
New Construction and Re-roofing
2001 Company SBS Modified Bitumen
for Monolithic Decks

Part 1 GENERAL

1.01 System Description

1.01.1 Furnish and install a complete, warranted two ply modified bitumen roofing system with all materials, labor and equipment necessary for and incidental to all roofing and related works as shown on the drawings and specified herein, and as approved in writing by 2001 Company "Specified Roofing Manufacturer" (2001 Company). Membranes are to be air sealed at all penetrations and perimeter as 2001 Company approved details.

1.02 Related Work Described Elsewhere

1.02.1 The provisions and intent of the contract including General Conditions, Special Conditions, and General Requirements apply to this work as if specified in this section. Drawings and general provisions of the contract, including General and Supplementary Conditions apply to this section.

1.02.2 All roofing work shall be performed by a qualified and experienced installer, is a 2001 approved contractor.

1.02.3 All materials used shall be manufactured, supplied or approved by the 2001 company.

1.02.4 All materials shall be installed in accordance with the 2001 Company current written specifications and details. Deviations shall not be made without prior written approval from 2001 Company.

1.02.5 A representative of 2001 Company shall inspect the completed roof to verify that the installation is in accordance with 2001 Company's current specifications and details.

1.03 Reference Standards

- American Society For Testing & Materials
- ASTM D 412-83: Standard Test Methods For Rubber Properties In Tension.
- ASTM D 2523-78: (Re-approved 1989) Standard Practice For Testing Load-Strain Properties Of Roofing Membranes.
- ASTM D 5147: Test Method For Sampling and Testing Modified Bituminous Material.
- ASTM D 4073-81: Test Method For Tensile Tear Strength Of Bituminous Roofing Membranes (Re 1990).
- Federal Specifications
- FS SS-A-666D: Asphalt Petroleum (Built-Up Roofing, Waterproofing And Dampproofing) 5/7/68, Amend. 7/24/68
- Florida Building Code Standard

- UBC 32-4: Roof Construction And Covering, Roof Insulation.
- Industry Publications
- National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual

1.04 Summary Of Work

1.04.1 Roofing System shall consist of two-ply SBS Modified Bitumen membrane over approved substrate. Equalizer valves shall be installed at roof corners and at intervals around the perimeter as shown on approved drawings. Contractor to supply the necessary labor, materials and equipment to provide a watertight warranted roofing system as specified herein.

1.05 Coordination

1.05.1 Coordinate with other trades affecting or affected by work of this section.

1.06 Quality Assurance

1.06.1 Contractor Qualifications - The contractor shall submit evidence of the following:

1.06.1.1 Valid "Certificate of Approval" from specified roofing manufacturer.

1.06.2 Manufacturer's Certification - Manufactuer shall have a minimum of Ten (10) years experience in providing SBS modified membrane, in United States.

1.07 Warranty Requirement

1.07.1 Roofing Contractor - Upon completion of work, furnish a written two (2) year workmanship guarantee, which shall cover workmanship and repairs at no cost to owner.

1.07.2 Manufacturer Warranties:

1.07.2.1 Manufacturer shall provide owner with a 10, 15, or 20 year (NDL) "Perpetual Care" watertight guarantee.

1.08 Regulatory Agency Requirements

1.08.1 Manufacturer shall submit proof of the following tests and agency requirements:

1.08.1.1 Fire Testing: Material shall be fully tested for a UL fire rating. The system should pass the said tests without any rock, covering or emulsions thus facilitating maintenance and eliminating excess load on the roof. All modified bituminous sheet roofing systems must bear testing agency (Underwriters Lab, Warnok Hersey etc.) on package or container indicating that materials have been produced under testing agency's classification and follow-up service.

1.08.1.2 Wind Uplift: System shall carry a UL -225 psf uplift rating. Provide modified bitumen sheet roofing system and component materials that have been evaluated for internal fire and wind uplift pressures associated with wind speeds per ASCE 7-98.

1.08.1.3 CGSB 37-GP-56M Standards for modified bitumen membrane as recommended by National Roofing Contractors Association of America. Tests conducted by an independent certified laboratory.

1.09 Product Delivery, Storage and Handling

1.09.1 Roofing material shall be delivered to the job-site in new, dry, unopened containers clearly showing catalog number, product description, manufacturer's name and location. Delivered quantities should be sufficient to assure continuous work.

1.09.2 Assure that materials are kept clean, and away from excessive heat and cold; do not remove labels or tear off protective covering until ready for application; store in an enclosed area where temperature is above 50 degrees and below 90 degrees Fahrenheit. Material shall not be stored directly on the ground.

1.09.3 Strictly follow recommended storage instructions supplied by the manufacturer.

1.10 Safety Requirements

1.10.1 Contractor shall comply with all building codes, and report any non-compliance of these specifications prior to any work.

1.10.2 At all times standards set forth by the Occupational Safety & Health Administration (OSHA) shall be maintained by the contractor and his crew.

PART 2 PRODUCTS

2.01 Roofing System

2.01.1 All components of the roofing system must be SBS modified bitumen.

2.01.2 Acceptable manufacturers, provided all requirements outlined in the specifications are met are:

2.01.2.1 2001 Company
2.01.2.2 Owner approved equal

2.01.3 Base Sheet Shall be:

2.01.3.1 "Torch-it" T3.8PS by 2001 Company

2.01.4 Cap Sheet Shall be:

2.01.4.1 "Torch-it" T4.5CM by 2001 Company

2.01.5 Flashing Shall be:

2.01.5.1 "Torch-it" T4.5CM by 2001 Company

2.02 Roofing Membranes

- **Base Sheet:** Shall be T3.8PS by 2001 Company

Modifier:	Styrene Butadiene Styrene
Coverage:	1 square
Reinforcement:	Non-woven Polyester
Weight:	Minimum nominal weight: 94 lb. per 100 square feet.

- **Cap Membrane:** Shall be SBS T4.5CM meeting the following specifications: Containing a minimum of 11.5% of high molecular weight Styrene Butadiene Styrene Block copolymers non oil extended grade. Approved copolymers are Enichem Sol T161 A/B or Shell Kraton 1184.

Modifier:	Styrene Butadiene Styrene
Coverage:	1 square
Reinforcement:	Polyester and Fiberglass reinforced
Thickness:	Minimum 160 mils
Bottom Surface:	Burn off film
Top Surface:	White granules
Weight:	Minimum nominal weight: 120 lb. per 100 square feet.

- **Flashing Membrane:** Shall be SBS T4.5CM meeting the following specifications: Containing a minimum of 11.5% high molecular weight of Styrene Butadiene Styrene Block copolymers non oil extended grade. Approved copolymers are Enichem Sol T161 A/B or Shell Kraton 1184.

Modifier:	Styrene Butadiene Styrene
Coverage:	1 square
Reinforcement:	Polyester and Fiberglass reinforced
Thickness:	Minimum of 160 mils
Bottom Surface:	Burn off film
Top Surface:	White granules
Weight:	Minimum nominal weight: 120 lb. Per 100 square feet.

2.03 Related Materials

- **Air valves**
  Shall be spun aluminum Equalizer Valves.

- **Nails And Fasteners**
  Shall be appropriate termination bar fasteners

- **Cants**
  Shall be perlite. Perlite strips must meet ASTM D 728-82.

- **Pitch pans, Expansion Joints, Metal Flashings**
  Shall be in full compliance with NRCA and SMACNA approved application standards.

- **Plumbing Vents**
  Must meet or exceed ASTM B29, 4-lb. sheet lead.

- **Pitch Pan Filler**
  Shall consist of a two component, cold applied urethane compound of pouring consistency meeting ASTM D 1596B, F.S.N. SS-S-15966.

- **Caulking Sealant**
  Sonolastic NP 1 by Sonneborn Building Products, Minneapolis, MN.

- **Equipment Protection Pad**
  Shall be Torch-it 4.5CM by 2001 Company

PART 3 EXECUTION

3.01 Installation

3.01.1 Air Seals - The existing roof shall be sealed airtight to all penetrations and at the roof perimeter as detailed on approved drawings.

3.01.2 Equalizer Valves – Shall be located per approved drawings. Valves shall be cut into both plies of modified bitumen so that venting to the monolithic substrate occurs.

3.01.3 Flashing - Flashing at the roof perimeter and at all penetrations including drains, pipes conduits, curbs, walls, expansion joints, and vents shall be installed as shown on SRM approved drawings. Flashing shall be fabricated from the roofing membrane, as indicated on the drawings.

3.02 Membrane Application

Prior to applying membranes the contractor and his foreman shall review the specifications with the manufacturer's technical representative to make certain all aspects of membrane application is understood. Application will proceed in strict accordance with specifications and detailed drawings. No deviation will be accepted unless authorized on company's letter head signed by the company's Manager of Technical Services ".

3.02.1 Torch Application

- **Modified SBS Base Sheet**

Base sheet shall be mechanically attached at perimeter with side and end laps torch welded. Base sheet

shall be cut into maximum 18' lengths. Side and end laps shall be a minimum of 6". Turn up 2" above cant strip at all vertical surface.

- **Cap Membrane Application**

  Cap sheet shall be fully torched perpendicular to base sheet. Cap sheet shall be cut into maximum 18' lengths. Side and end laps shall be a minimum of 6". End laps shall be staggered not less than three (3) feet apart. Turn up 2" above cant strip at all vertical surfaces. Areas with less than 1/8" outflow of bitumen will be checked with a trowel, heat applied between laps and properly sealed.

- Temporary Seals - The roofing membrane to the existing roof at the end of each day or at the onset of inclement weather to prevent water from flowing into the completed roofing system. Temporary seals shall be removed upon resumption of work.

3.03 Cleaning

3.03.1 Upon completion of the roofing system, equipment and excess material shall be removed from the site.

3.04 Protection

3.04.1 Where equipment, wood sleepers or walkway slabs are to be installed over the roofing membrane, an additional equipment pad shall be installed. Due caution shall be exercised to prevent roofing membrane damage during placement.

3.05 Existing/General Conditions

3.05.1 Monolithic substrate shall be inspected for deficiencies prior to base sheet installation.

3.06 Field Measurement

3.06.1 Contractor has sole responsibility for verifying all measurements and/or estimates required for material quantity and sizes; and obtain coverage rates and material descriptions from manufacturer.

3.07 Protection

3.07.1 Prior to any job shutdown, all seams laid in the preceding time period shall be checked for water tightness.

3.07.2 All finished work of other trades which is damaged in the execution of work under this section shall be replaced or restored to the original condition by contractor at contractor's expense.

3.07.3 Ground storage and work shall be confined to the areas designated by the Owner as agreed upon at the pre-bid conference.

3.08 Air Sealed Perimeter And Penetrations

3.08.1 Perimeter shall be air sealed per recommended 2001 detail.
3.08.2 All penetrations shall be air sealed per recommended 2001 detail.

3.09 Workmanship

3.09.1 Maintain constant supervision by a competent foreman.
3.09.2 Advise owner's representative in writing of all potential leaks as may be caused by other trades.
3.09.3 Install only as much roofing material as can be completed and covered in one day. No section of the roof should be left exposed and unfinished.
3.09.4 Do not apply any roofing materials before sunrise, or at anytime when there are indications of rain.
3.09.5 Insure that no heavy objects remain in one place for more than a few seconds on the portions of the new roofing membrane where the bitumen adhesive has not yet set or the membrane is still hot. Such time shall be 45 to 90 minutes, depending on ambient temperatures.
3.09.6 Insure that all fishmouths are cut and patched (do not attempt to walk down the fishmouths). Objects causing separation between reinforcing plies must be removed.
3.09.7 Contractor shall, at the end of each day's work, install temporary water cut-offs at all points where the roofing membrane does not abut a wall, wood edge member, or an expansion joint. All water cut-offs shall be removed cleanly when work is resumed.
3.09.8 Every attempt shall be made to install flashings at openings, projections, and walls adjoining new roofing during all work periods. If circumstances do not allow this, these areas shall be made watertight at the end of each day or work period.

3.10 Deficiency Adjustments

3.10.1 Deficiencies identified during the final inspection shall be corrected within five (5) working days. The warranty will not be issued until the deficiencies are corrected.
3.10.2 Repairing: The contractor shall be held fully responsible for cleaning, repairing, touch up or replacing (when directed) items or areas which have been soiled, discolored or damaged by the work of this section. Precaution shall be taken against splashing any material on to adjacent areas. The contractor shall immediately remove any trace of such splashes or spills.

3.11 Debris Disposal

The contractor shall make his own arrangements for disposal of debris and waste material. The owner assumes no responsibility for the disposal of any roofing material. Debris from project will be removed daily, and at no time allowed to block any thoroughfare.

End Of Division 7