SECTION 07 72 00

WATERPROOFING OVERBURDEN ACCESSORIES

(Root Barrier, Drainage Mat, Drainage Plate, Heavy Duty Drainage Module, Roof Drain Inspection Chamber, Roof Drain Box, Filter Fabric, Geonet Drainage Layer, Moisture Retention BoardMat, Hard-Scape/Roof Ballast, Paver Overburden, Paver Pedestals, Growing Media, Soil Edge Restraints, Sedum Mats, Sedum Tiles, Modular Trays)

NOTE: This guide specification is provided as a guideline and must be modified, as required, by the Designer of Record for each project. This specification is prepared in general accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Additional information is provided. [delete this paragraph]

Optional information to consider is presented in “blue” font below. Choose appropriate options and delete any information deemed appropriate for each individual project. [delete this paragraph]

# GENERAL

## SUMMARY

### Complete all work as required to obtain the specified manufacturer’s warranty.

### Cleaning and preparing substrates to receive overburden accessories.

### Work shall include, but is not limited to, providing all materials and labor to complete the following:

#### HORIZONATAL WATERPROOFING ACCESSORIES:

##### Work shall include all labor and materials for following:

###### BALLAST OVERBURDEN includes:

ROOT BARRIER

DRAINAGE MAT/DRAINAGE PLATE (OPTIONAL)

FILTER FABRIC

INSULATION (OPTIONAL)

BALLAST

###### PAVER OVERBURDEN includes:

DRAINAGE MAT/DRAINAGE PLATE

FILTER FABRIC (OPTIONAL)

INSULATION (OPTIONAL)

PEDESTALS (OPTIONAL)

PAVERS

###### GREEN MODULE OVERBURDEN includes:

ROOT BARRIER

FILTER FABRIC (OPTIONAL)

MOISTURE RETENTION MAT (OPTIONAL)

PRE-VEGETATIVE MODULAR TRAY

###### EXTENSIVE OVERBURDEN includes:

ROOT BARRIER

DRAINAGE MAT/DRAINGE PLATE (OPTIONAL)

FILTER FABRIC (OPTIONAL)

MOISTURE RETENTION MAT (OPTIONAL)

GEONET (OPTIONAL)

GROWTH MEDIA

PLANTINGS

###### SEMI-INTENSIVE OVERBURDEN includes:

ROOT BARRIER

DRAINAGE MAT/DRAINAGE PLATE (OPTIONAL)

GEONET (OPTIONAL)

FILTER FABRIC (OPTIONAL)

MOISTURE RETENTION MAT (OPTIONAL)

GROWTH MEDIA

PLANTINGS

###### INTENSIVE OVERBURDEN includes:

ROOT BARRIER

DRAINAGE MAT/DRAINAGE PLATE (OPTIONAL)

GEONET (OPTIONAL)

FILTER FABRIC (OPTIONAL)

GROWTH MEDIA

PLANTINGS

## RELATED SECTIONS:

### 010000 - General Requirements

### 011000 - Summary of Work

## REFERENCES

### ASTM INTERNATIONAL STANDARDS.

#### ASTM D1000, Standard Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications

#### ASTM D1004, Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting

#### ASTM D1203, Standard Test Methods for Volatile Loss from Plastics Using Activated Carbon Methods.

#### ASTM D1204, Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.

#### ASTM D1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics.

#### ASTM D4716, Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.

#### ASTM D4491, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

#### ASTM D4533, Standard Test Method for Trapezoid Tearing Strength of Geotextiles

#### ASTM D4632, Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

#### ASTM D4716, Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head

#### ASTM D4833, Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.

#### ASTM D5261, Standard Test Method for Measuring Mass per Unit Area of Geotextiles

#### ASTM D6241, Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe.

#### ASTM E2398, Standard Test Method for Water Capture and Media Retention of Geo-composite Drain Layers for Vegetative (Green) Roof Systems

## SUBMITTALS

### Product Data Sheets:

#### Submit manufacturer’s product data sheets, installation instructions and/or general requirements for each component.

## QUALITY ASSURANCE

### MANUFACTURER QUALIFICATIONS:

#### Manufacture shall have 10 years of history manufacturing waterproofing materials in the US.

#### Manufacturer shall have trained technical service representatives employed by the manufacturer, independent of sales.

### CONTRACTOR QUALIFICATIONS:

#### Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.

#### Applicators shall have completed projects of similar scope using similar waterproofing materials as specified herein.

#### Contractor shall provide full time, on-site superintendent or foreman experienced with the application of below-grade waterproofing.

#### Applicators shall be skilled in the application methods of specified materials.

#### Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.

#### Contractor shall maintain a copy of all submittal documents, on-site, available always for reference.

## DELIVERY, STORAGE AND HANDLING

### Refer to each product data sheet or other published literature for specific requirements.

### Refer to product Safety Data Sheets (SDS) for storage and handling related hazards and take all necessary measures and precautions to comply with storage and handling requirements.

### Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.

### Protect materials to prevent damages due to environmental exposures.

### Store and dispose of materials in accordance with building owner requirements, site conditions, and the requirements of local jurisdictions.

### Properly dispose of all waste, and debris.

### All damaged materials shall be removed from job site and replaced with new, suitable materials.

## SITE CONDITIONS

### SAFETY:

#### The contractor shall be responsible for complying with all project-related health, safety, and environmental requirements.

#### The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

### ENVIRONMENTAL CONDITIONS:

#### Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials.

#### Materials and methods shall be adjusted as necessary to accommodate varying project conditions.

#### Materials shall not be installed when conditions are unacceptable to achieve the specified results.

#### During preparation, cleaning, and application of specified materials, follow all health, safety and environmental requirements related to applicable materials involved with the work and related exposures.

#### Properly handle and dispose of all cleaning materials, waste and debris associated with the specified work.

## WARRANTY

### Manufacturer's Warranty:

#### The specified accessories shall be included as a rider listing all used (system rider) [including overburden removal] in the manufacturer’s waterproofing warranty.

# PRODUCTS

## MANUFACTURER

### SINGLE SOURCE MANUFACTURER: All waterproofing materials shall be manufactured by a single supplier.

#### Comply with the manufacturer’s requirements as necessary to provide the specified warranty.

### ACCEPTABLE MANUFACTURER:

#### SOPREMA, located at: 310 Quadral Drive, Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.

#### Acceptable alternate manufacturers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## WATERPROOFING ACCESSORIES

### ROOT BARRIER Specifier note: Choose one of the following.

#### BASIS OF DESIGN: SOPRABARRIER 20PE is composed of a virgin blended linear- low-density polyethylene (LLOPE). SOPRABARRIER is designed to protect underlying roofing and waterproofing assemblies from root penetration.

##### Length, ft (m): 75 ft (22.9)

##### Width, ft (m): 12.67 (3.9)

##### Thickness, mil (mm): 20 (0.51)

##### Coverage, ft2 (m2): 950.25 (89.3)

##### Tensile strength, ppi (N/cm) per ASTM D6693: 112 (196)

##### Ultimate elongation, %, per ASTM D6693: 950%

##### Tear resistance, lbf (N) per ASTM D1004: 12 (53)

##### Puncture resistance, lbf (N) per ASTM D4833: 44 (196)

##### Carbon black, % per ASTM D4218: 2.5

##### Max static use temperature, ºF (ºC): 180 (82)

##### Min static use temperature, ºF (ºC): -70 (-57)

#### BASIS OF DESIGN: SOPRABARRIER 30PE is composed of a virgin blended linear- low-density polyethylene (LLOPE). SOPRABARRIER is designed to protect underlying roofing and waterproofing assemblies from root penetration.

##### Length, ft (m): 75 ft (22.9)

##### Width, ft (m): 12.67 (3.9)

##### Thickness, mil (mm): 30 (0.76)

##### Coverage, ft2 (m2): 950.25 (89.3)

##### Tensile strength, ppi (N/cm) per ASTM D6693: 168 (294)

##### Ultimate elongation, %, per ASTM D6693: 950%

##### Tear resistance, lbf (N) per ASTM D1004: 19 (85)

##### Puncture resistance, lbf (N) per ASTM D4833: 66 (294)

##### Carbon black, % per ASTM D4218: 2.5

##### Max static use temperature, ºF (ºC): 180 (82)

##### Min static use temperature, ºF (ºC): -70 (-57)

#### BASIS OF DESIGN: SOPRABARRIER 40PE is composed of a virgin blended linear- low-density polyethylene (LLOPE). SOPRABARRIER is designed to protect underlying roofing and waterproofing assemblies from root penetration.

##### Length, ft (m): 75 ft (22.9)

##### Width, ft (m): 12.67 (3.9)

##### Thickness, mil (mm): 40 (1.0)

##### Coverage, ft2 (m2): 950.25 (89.3)

##### Tensile strength, ppi (N/cm) per ASTM D6693: 224 (392)

##### Ultimate elongation, %, per ASTM D6693: 950%

##### Tear resistance, lbf (N) per ASTM D1004: 25 (111)

##### Puncture resistance, lbf (N) per ASTM D4833: 88 (391)

##### Carbon black, % per ASTM D4218: 2.5

##### Max static use temperature, ºF (ºC): 180 (82)

##### Min static use temperature, ºF (ºC): -70 (-57)

### SEAM TAPE

#### BASIS OF DESIGN: SOPRASEAL STICK FLASH PRO low residue adhesive seam tape with low water vapor permeance.

##### Sizes: 4 in wide x 75 ft

### DRAINAGE MAT

#### BASIS OF DESIGN: SOPRADRAIN 100 Light-duty is a faced with a woven fabric layer, this high-density drainage panel filters out dirt and sand particles to provide free-flowing drainage in planters and vegetated roof systems.

##### Material: Polypropylene

##### Thickness, in (mm) per ASTM D1777: 0.40 (10.16)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >11,000 (527)

##### Flow capacity, gal/min/ft (l/min/m) per ASTM D4716: 18 (223)

##### Grab strength, lb per ASTM D4632: 100.0 (0.445)

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 140 (5,704.0)

##### Length, ft (m): 50 (15.24)

##### Width, ft (m): 4 (1.22)

##### Coverage, ft2 (m2): 200 (18.6)

#### BASIS OF DESIGN: SOPRADRAIN 102 Medium Duty is a faced with a woven fabric layer, this high-density drainage panel filters out dirt and sand particles to provide free-flowing drainage in planters and vegetated roof systems.

##### Material: Polypropylene

##### Thickness, in (mm) per ASTM D1777: 0.40 (10.16)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >15,000 (718)

##### Flow capacity, gal/min/ft (l/min/m) per ASTM D4716: 21 (260)

##### Grab strength, lb per ASTM D4632: 100.0 (0.445)

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 140 (5,704.0)

##### Length, ft (m): 50 (15.24)

##### Width, ft (m): 4 (1.22)

##### Coverage, ft2 (m2): 200 (18.6)

#### BASIS OF DESIGN: SOPRADRAIN 104 Heavy Duty is a faced with a woven fabric layer, this high-density drainage panel filters out dirt and sand particles to provide free-flowing drainage in planters and vegetated roof systems.

##### Material: Polypropylene

##### Thickness, in (mm) per ASTM D1777: 0.40 (10.16)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >21,000 (1005)

##### Flow capacity, gal/min/ft (l/min/m) per ASTM D4716: 23 (286)

##### Grab strength, lb per ASTM D4632: 370 (1.6447)

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 60 (2460.0)

##### Length, ft (m): 50 (15.24)

##### Width, ft (m): 4 (1.22)

##### Coverage, ft2 (m2): 200 (18.6)

#### BASIS OF DESIGN: SOPRADRAIN ECOVENT is composed from an extruded polymer matrix of intertwined monofilaments that are heat-welded together forming a durable structure. The topside is surfaced with a heat-laminated filter fabric.

##### Material: Polypropylene

##### Thickness, in (mm) per ASTM D1777: 0.50 (12.7)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >30,000 (1436)

##### Grab strength, lb per ASTM D4632: 120

##### Grab elongation, % per ASTM D4632: 50

##### Trapezodial tear, lb per ASTM D6241: 50

##### Puncture resistance, lb per ASTM D4833: 70

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 120.0 (454.2)

##### Length, ft (m): 100 (30.5)

##### Width, in (m): 48 (1.2)

##### Coverage, ft2 (m2): 400 (37.2)

#### BASIS OF DESIGN: SOPRADRAIN ECOVENT 2 is composed from an extruded polymer matrix of intertwined monofilaments that are heat-welded together forming a durable structure. The top and underside is surfaced with a heat-laminated filter fabric to provide additional protection to the waterproofing membrane.

##### Material: Polypropylene

##### Thickness, in (mm) per ASTM D1777: 0.50 (12.7)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >30,000 (1436)

##### Grab strength, lb per ASTM D4632: 120

##### Grab elongation, % per ASTM D4632: 50

##### Trapezodial tear, lb per ASTM D6241: 50

##### Puncture resistance, lb per ASTM D4833: 70

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 120.0 (454.2)

##### Length, ft (m): 100 (30.5)

##### Width, in (m): 48 (1.2)

##### Coverage, ft2 (m2): 400 (37.2)

### DRAINAGE PLATE

#### BASIS OF DESIGN: SOPRANATURE DRAIN PLATE 25 is a thick, semi-rigid board composed of high-density polyethylene designed to withstand heavy pedestrian traffic.

##### Material: 100% post-consumer recycled HDPE

##### Thickness, in (m): 1.0 (0.025)

##### Compressive strength, psi (kPa)2), per ASTM D1621: 5,240 (251)

##### Water retention, gal/ft2 (l/m2): 0.12 (5)

##### Aggregate fill volume, ft3/ft2 (l/m2): 0.025 (7.5)

##### Length, ft (m): 79 (2)

##### Width, in (m): 39 (1)

##### Coverage, ft2 (m2): 19 (1.75)

#### BASIS OF DESIGN: SOPRANATURE DRAIN PLATE 40 is a thick, semi-rigid board composed of high-density polyethylene designed to withstand heavy pedestrian traffic.

##### Material: 100% post-consumer recycled HDPE

##### Thickness, in (m): 1.5 (0.04)

##### Compressive strength, psi (kPa)2), per ASTM D1621: 3,000 (144)

##### Water retention, gal/ft2 (l/m2): 0.22 (9)

##### Aggregate fill volume, ft3/ft2 (l/m2): 0.06 (17)

##### Length, ft (m): 79 (2)

##### Width, in (m): 39 (1)

##### Coverage, ft2 (m2): 19 (1.75)

#### BASIS OF DESIGN: SOPRANATURE DRAIN PLATE 60 is a thick, semi-rigid board composed of high-density polyethylene designed to withstand heavy pedestrian traffic.

##### Material: 100% post-consumer recycled HDPE

##### Thickness, in (m): 1.5 (0.04)

##### Compressive strength, psi (kPa)2), per ASTM D1621: 14,500 (695)

##### Water retention, gal/ft2 (l/m2): 0.55 (22)

##### Aggregate fill volume, ft3/ft2 (l/m2): 0.15 (45)

##### Length, ft (m): 79 (2)

##### Width, in (m): 39 (1)

##### Coverage, ft2 (m2): 22.5 (2.1)

### DRAINAGE PLATE AGGREGATE

#### BASIS OF DESIGN: AGGREDRAIN is made of rotary-kiln expanded clay aggregate and/or expanded shale. AGGREDRAIN closely emulates PH and drainage tendencies of natural soils and complies with all related ASTM and FLL standards and is used with DRAINAGE PLATES.

### GEONET

#### BASIS OF DESIGN: GEONET is composed of a high-density polyethylene geonet drainage core heat fused to a non-woven filter fabric. The integrated core and fabric system optimizes drainage channel consistency, minimizing soil particle intrusion for maximum flow capacity, allowing water to freely enter the drainage channel.

##### Material: High-density polypropylene

##### Thickness, in (mm): 0.25 (6.35)

##### Compressive strength, psi (kPa)2), per ASTM D1621: >40,000 (1,915.0)

##### Grab strength, lb (kN) per ASTM D4632: 100.0 (0.442)

##### Grab elongation, % per ASTM D4632: 50

##### Flow rate, gal/min/ft (l/min/m) per ASTM D4491: 140.0 (5704.0)

##### Length, ft (m): 75 (22.86)

##### Width, in (m): 48 (1.2)

##### Coverage, ft2 (m2): 300 (27.9)

### OVERBURDEN ACCESSORIES

#### BASIS OF DESIGN: SOPRANATURE DRAIN BOX is manufactured from recycled acrylonitrile-butadiene-styrene (ABS) with narrow slots on the sidewalls and small holes on the top cover.

##### Material: Black recycled ABS

##### Thickness, in (cm): 4.0 (10.16)

##### Length, ft (m): 14.5 (36.83)

##### Width, in (m): 14.5 (36.83)

#### BASIS OF DESIGN: SOPRANATURE METAL EDGING are lightweight, durable aluminum edging designed to retain planting media, stones, pavers, and tiles in a vegetated roofing system.

##### Height x width, in (mm): [4x4 (100x100)][6x6 (150x150)][8x8 (200x200)][10x10 (250x250)][12x12 (300x300)]

##### Length, ft (m): 8 (2.4)

#### BASIS OF DESIGN: SOPRANATURE INSPECTION CHAMBER are designed to fit over roof drains and protects drains from debris and particles that can impact regular operation. Manufactured from 16 ga aluminum, the chamber measures 12 in (305 mm) square and 5.8 in (148 mm) in height.

### FILTER FABRIC

#### BASIS OF DESIGN: SOPRANATURE FILTER FABRIC is made of a non-woven needle punched polypropylene and polyester fibers used as filter cloth or separation sheet in protected membrane roofing systems, green roofs, roof gardens, and plaza-decks.

##### Core: Polypropylene

##### Length, ft (m): 492 (150)

##### Width, ft (m): 11.6 (3.5)

##### Thickness, mil (mm): 39.4 (1.0)

##### Coverage, ft2 (m2): 5,658 (525)

##### Tensile strength, (minimum), lbf (N) per ASTM D4632: 112/101 (500/450)

##### Ultimate elongation, % per ASTM D4632: 40-100

##### Trapezodial tear, lbf (N) per ASTM D4533: 52/47 (230/210)

##### Permeability, mil/sec (mm/sec) per ASTM D4491: 55 (1.44)

##### Filtration opening size FOS, mil (microns) per ASTM D4751: 3.5-4.7 (90-120)

### MOISTURE RETENTION BOARD/MAT \*\*specifier note on MRB 30: a moisture retention board replaces mineral wool for storm water management on the roof.

#### BASIS OF DESIGN: SOPRANATURE MRB 30 is a moisture retention board with drainage properties made from 100% recycled polyester used in flat or sloped green roofing systems to retain a certain amount of water and channel excess to the water outlets.

##### Material: 100% recycled polyester

##### Color: Dark gray

##### Thickness, in (mm): 1.18 (30)

##### Length ft (m): 3.3 (1)

##### Width, in (m): 4.0 (1.2)

##### Coverage, ft2 (m2): 12.9 (1.2)

##### Compressive strength 10% deformation, psi (kPa) per ASTM D1621: 0.42 (2.9)

##### Fully saturated water retention, lb/ft (kg/m2) per ASTM E2397: 4.4 (21.6)

##### Puncture resistance, lbf (N) per ASTM D4833: 49.5 (220)

##### Flow rate @ 20kPa, hydraulic gradient of 1.0, gal/min/ft (L/min/m) per ASTM D4716: 0.017 (0.2)

#### BASIS OF DESIGN: SOPRANATURE MRM 5 is a dual geotextile fabric (mat) consisting of a spun-bond continuous filament polyester needle bonded to polyester fleece, designed to provide water and nutrient storage for green roofing applications without restricting root growth or water drainage. Excellent retention and capillarity properties provide enhanced storm water runoff mitigation.

##### Material: 100% polyester

##### Thickness, in (mm): 1.18 (30)

##### Length ft (m): 3.3 (1)

##### Width, in (m): 4.0 (1.2)

##### Coverage, ft2 (m2): 12.9 (1.2)

##### Compressive strength 10% deformation, psi (kPa) per ASTM D1621: 0.42 (2.9)

##### Fully saturated water retention, lb/ft (kg/m2) per ASTM E2397: 4.4 (21.6)

##### Puncture resistance, lbf (N) per ASTM D4833: 49.5 (220)

##### Flow rate @ 20kPa, hydraulic gradient of 1.0, gal/min/ft (L/min/m) per ASTM D4716: 0.017 (0.2)

### EXTRUDED POLYSTYRENE INSULATION

#### BASIS OF DESIGN: SOPRA-XPS 60 are rigid thermal insulation boards made of extruded polystyrene closed-cell foam. It is mainly used for SOPREMA foundation systems under slabs, civil engineering applications, protected-membrane roofing systems (inverted), parking decks and plaza decks.

##### Material: Extruded polystyrene closed cell foam.

##### Color: Grey

##### Thicknesses: Square edged product [1.0 to 3.5 In] Shiplap edged product [2.0 to 4.0 in].

##### Length: 8 ft (2.4 m)

##### Width: 2 ft (0.6 m) and 4 ft (1.2 m)

##### Standard: ASTM C578-14 Type VII

##### Thermal resistance per in: R-5.0 per ASTM C518

##### Compressive strength: 60 psi (415 kPa) per ASTM D1621

##### Dimensional stability %: 1.5% max per ASTM D2126

##### Flexural strength: 145 psi (1000 kPa) per ASTM C203

##### Water absorption by volume: 0.1% per ASTM C272

##### Water vapor permeance: 0.9 perm (52 Ng/Pa\*\*s\*m2) per E96 (method A)

##### Flame spread: 20/15 per UL 723/E84

##### Limiting oxygen index: 24% per ASTM D2863

##### Global recycling content: 57%

#### BASIS OF DESIGN: SOPRA-XPS 100 are rigid thermal insulation boards made of extruded polystyrene closed-cell foam. It is mainly used for SOPREMA foundation systems under slabs, civil engineering applications, protected-membrane roofing systems (inverted), parking decks and plaza decks.

##### Material: Extruded polystyrene closed cell foam.

##### Color: Grey

##### Thicknesses: Square edged product [2.0 to 3.0 In] Shiplap edged product [3.0 in].

##### Length: 8 ft (2.4 m)

##### Width: 2 ft (0.6 m)

##### Standard: ASTM C578-14 Type VI

##### Thermal resistance per in: R-5.0 per ASTM C518

##### Compressive strength: 100 psi (690 kPa) per ASTM D1621

##### Dimensional stability %: 1.5% max per ASTM D2126

##### Flexural strength: 160 psi (1100 kPa) per ASTM C203

##### Water absorption by volume: 0.9% per ASTM C272

##### Water vapor permeance: 0.9 perm (52 Ng/Pa\*\*s\*m2) per E96 (method A)

##### Flame spread: 20/15 per UL 723/E84

##### Limiting oxygen index: 24% per ASTM D2863

##### Global recycling content: 68%

### GROWTH MEDIA \*\*Note growth media types very based on geographic location. For types not listed below, contact SOPREMA for assistance\*\*.

#### BASIS OF DESIGN: SOPRANATURE SOPRAFLOR X is a growing medium formulated for extensive non-irrigated and low-maintenance SOPRANATURE systems.

##### Vegetation: **SEDUMS, DRY PRAIRIE GRASSES, DRY FLOWER MEADOWS, AND VEGETATION WITH LOW WATERING NEEDS.**

##### Composition: Mineral aggregates, professional peat, sand, and compost from vegetable matter.

##### Total pore volume: 60-70%

##### Air-filled porosity: 20-30%

##### Max water capacity: 30-40%

##### Bulk density-dry: 42-68 lbs/ft (675-1100 kg/m2)

##### Bulk density-field capacity: 72-78 lbs/ft3 (1150-1250 kg/m3

##### Organic matter content: 5-10%

##### pH: 6.0-7.0

##### Mineral aggregate content: 55%

#### BASIS OF DESIGN: SOPRANATURE SOPRAFLOR I is a growing medium formulated for intensive and semi-intensive SOPRANATURE green roofs and plaza deck/roof gardens.

##### Vegetation: **SEDUMS, DRY PRAIRIE GRASSES, DRY FLOWER MEADOWS, AND VEGETATION WITH LOW WATERING NEEDS.**

##### Composition: Mineral aggregates, professional peat, sand, and compost from vegetable matter.

##### Total pore volume: 65-75%

##### Air-filled porosity: 20-25%

##### Max water capacity: 40-50%

##### Bulk density-dry: 37-62 lbs/ft (600-1000 kg/m2)

##### Bulk density-field capacity: 62-69 lbs/ft3 (1000-1100 kg/m3

##### Organic matter content: 10-15%

##### pH: 6.0-6.5

##### Mineral aggregate content: 55%

#### BASIS OF DESIGN: SOPRANATURE SOPRAFLOR P is a growing medium specially formulated for landscaping of SOPRANATURE terraces and planters.

##### Soil profile: Contains nitrogen, phosphorus, soluble potash, magnesium, calcium, sulfur, and iron.

##### Vegetation: **SHRUBS, TREES, AND OTHER VEGETATION WITH LOW TO VERY HIGH WATERING NEEDS.**

##### Composition: Brown humus peat, aged bark, sand, biosol compost, lime calcite, gypsum, magnesium oxide and fertilizer.

##### Total pore volume: 70-80%

##### Air-filled porosity: 5-10%

##### Max water capacity: 70-80%

##### Bulk density-dry: 50-56 lbs/ft (800-900 kg/m2)

##### Bulk density-field capacity: 75-81 lbs/ft3 (1200-1300 kg/m3

##### Organic matter content: 30-40%

##### pH: 6.5-7.0

##### Mineral aggregate content: 15-20%

### SEDUM TILES

#### BASIS OF DESIGN: SOPRANATURE SEDUM TILES have a coconut fiber base to assure effective rooting of plants to the underlying growth medium and hold the tile together for easy installation.

##### Vegetation coverage: 95%

##### Dimensions: 12.0 x 24.0 in

##### Coverage: 2 ft2

##### Fiber/soil depth: 1.0 in

##### Saturated weight: 5.48 lbs.

##### Tiles per pallet: 150

##### Coverage per pallet: 300 ft2

### PAVER PEDESTAL

#### BASIS OF DESIGN: SOPRANATURE PAVER PEDESTAL support paving blocks on pedestrian traffic terraces. Manufactured from injection molded polypropylene, SOPRANATURE PAVER PEDESTALS consist of a head screw nut assembly with an 8 in (200 mm) wide base plate. SOPRANATURE PAVER PEDESTALS allow for the adjustment and the leveling of paving blocks and are available in 6 references for heights from 1.0 to 10.2 inches (25 to 260 mm).

### PAVERS

#### BASIS OF DESIGN: [BRAND NAME HERE] CONCRETE PAVERS are to consist of Portland cement, natural colored aggregate, with non-organic pigments resistant to alkalinity and metal reinforcement for strength.

##### Portland cement: per ASTM C150.

##### Aesthetic class/shade range: per ASTM C609.

### DRAIN INSPECTION CHAMBER

#### BASIS OF DESIGN: SOPRANATURE INSPECTION CHAMBER is designed to fit over roof drains and protects drains from debris and particles that can impact regular operation. Manufactured from 16 ga aluminum, the chamber measures 12 in (305 mm) square and 5.8 in (148 mm) in height. Special order sizes are available. The door is equipped with a latch so it can be locked up if required.

##### Size: 12 in x 12 in

### SOIL EDGE RESTRAINTS

#### BASIS OF DESIGN: SOPRANATURE METAL EDGING is a lightweight, durable aluminum edging designed to retain planting media, stones, pavers, and tiles in a vegetated roofing system. Multiple height options are available and can be ordered with a solid or slotted edge. Inside and outside corners are available for a complete assembly.

##### Height x width: [4 in x 4 in][6 in x 6 in][8 in x 8 in][10 in x10 in][12 in x 12 in]

# EXECUTION

## EXAMINATION

### GENERAL

#### Before proceeding with the installation of the overburden accessories, the waterproofing system shall be complete. This includes, but not limited to:

##### Required visual observations, site visits and inspections.

##### Required qualitative analysis, and or quantitative testing.

##### All required corrective actions required by the specifier/designer and waterproofing manufacture for warranty issuance is complete and satisfactory to begin the specified work.

#### Protect the waterproofing from traffic, material handling, and storage before and during the overburden installation.

#### During the application of specified materials, the contractor shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified work.

#### All damages to waterproofing shall be identified by the overburden contractor and immediately reported to the waterproofing contractor, general contractor, designer of record, manufacturer and/or owner.

#### Damaged and incomplete repairs to waterproofing shall not be concealed by the specified materials.

#### Work shall not proceed until all waterproofing damages are repaired and approved by the waterproofing contractor.

#### Proceeding with specified work shall be acknowledgement of acceptable substrate conditions.

## PREPARATION

### GENERAL:

#### Before commencing work, the contractor shall prepare all work areas to ensure conditions are satisfactory to proceed with the installation of specified materials.

#### Ensure all foreign materials and debris are removed, and the conditions are clean and satisfactory to proceed with the specified work.

#### KEEP WHEN USING XPSExtruded polystyrene insulation is a combustible foam plastic. The maximum service temperature is 167 °F (75 °C). Prevent exposure to extreme heat and open flames.

## BALLAST OVERBURDEN

### ROOT BARRIER REQUIRED FOR BALLAST OVERBURDEN

#### Refer to drawings to determine location and placement of the specified root barrier.

##### Ensure waterproofing is fully cured for 24 hours or more before applying root barrier and subsequent materials.

##### Where specified, ensure protection course is in place prior to installing the root barrier.

##### Thoroughly inspect waterproofing and protection course, and make all necessary repairs, prior to installing the root barrier.

##### Unroll root barrier onto substrate, overlap all seams 12 to 24 inches at all laps.

##### Ensure root barrier is applied over, and beyond all surfaces exposed to potential root sources.

##### Tape all overlapping seams using specified seam tape, or hot-air weld seams.

##### Ensure there are no open laps nor exposed waterproofing surfaces prior to installing subsequent materials.

### DRAINAGE MAT

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC REQUIRED FOR BALLAST OVERBURDEN

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### INSULATION

#### Follow insulation system component product data sheets, published general requirements and, approvals.

#### Install all insulation system components on clean, dry, uniform and properly prepared substrates.

#### All insulation system boards shall be carefully installed and fitted against adjoining sheets to form tight joints.

#### Insulation system boards that must be cut to fit shall be saw-cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation components. Uneven or broken edges shall not be accepted. Remove dust and debris that develops during cutting operations.

#### Stagger successive layers of insulation 12 in vertically and laterally to ensure board joints do not coincide with joints from the layers above and below.

### INSULATION ADHERED USING DUOTACK

#### Apply the specified two-component insulation adhesive to adhere insulation.

#### Follow insulation adhesive product data sheets and published general requirements for installation requirements.

#### Apply insulation adhesive in uniform ribbons, 1/2 in to 3/4 in wide at the point of application.

#### Immediately install insulation into insulation adhesive and apply weight to ensure the materials maintain full contact with all ribbons for complete adhesion along all ribbons. Do not allow insulation adhesive to skin-over before placing the insulation materials into the adhesive.

#### Adhere the insulation system to meet the specified wind uplift resistance performance and specified warranty requirements.

##### Maximum adhesive ribbon spacing shall be 12 in on-centers and as required by the waterproofing manufacturer to meet warranty requirements and as required to meet building code wind uplift resistance requirements.

### BALLAST REQUIRED FOR BALLAST OVERBURDEN

#### Where specified, install stone ballast or paver hard-scape material for maintenance paths, control strips and walkways.

#### Hard-scape material should be provided at all roof perimeters, building walls, penetrations, and access hatches.

#### A protection material shall be used between the roof membrane and stone ballast, pavers, or paver pedestals.

#### Paver systems shall be installed in strict accordance with written instructions of Paver System Manufacturer.

#### Install finish pavers, on adjustable pavers support pedestal and leveling shims as required, in accordance with Manufacturer’s recommendations and architectural layout.

## PAVER OVERBURDEN

### DRAINAGE MAT CHOOSE ONE OF THE TWO DRAINAGE MAT OPTIONS THAT ARE REQUIRED FOR PAVER OVERBURDEN

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE CHOOSE ONE OF THE TWO DRAINAGE MAT OPTIONS THAT ARE REQUIRED FOR PAVER OVERBURDEN

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### INSULATION

#### Follow insulation system component product data sheets, published general requirements and, approvals.

#### Install all insulation system components on clean, dry, uniform, and properly prepared substrates.

#### All insulation system boards shall be carefully installed and fitted against adjoining sheets to form tight joints.

#### Insulation system boards that must be cut to fit shall be saw-cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation components. Uneven or broken edges shall not be accepted. Remove dust and debris that develops during cutting operations.

#### Stagger successive layers of insulation 12 in vertically and laterally to ensure board joints do not coincide with joints from the layers above and below.

### INSULATION ADHERED USING DUOTACK

#### Apply the specified two-component insulation adhesive to adhere insulation.

#### Follow insulation adhesive product data sheets and published general requirements for installation requirements.

#### Apply insulation adhesive in uniform ribbons, 1/2 in to 3/4 in wide at the point of application.

#### Immediately install insulation into insulation adhesive and apply weight to ensure the materials maintain full contact with all ribbons for complete adhesion along all ribbons. Do not allow insulation adhesive to skin-over before placing the insulation materials into the adhesive.

#### Adhere the insulation system to meet the specified wind uplift resistance performance and specified warranty requirements.

##### Maximum adhesive ribbon spacing shall be 12 in on-centers and as required by the waterproofing manufacturer to meet warranty requirements and as required to meet building code wind uplift resistance requirements.

### PEDESTALS

#### Install the specified pedestals in accordance with the product data sheet, literature, and construction detailing.

### PAVERS REQUIRED FOR PAVER OVERBURDEN

#### Where specified, install stone ballast or paver hard-scape material for maintenance paths, control strips and walkways. Hard-scape material should be provided at all roof perimeters, building walls, penetrations, and access hatches.

#### A protection material shall be used between the roof membrane and stone ballast, pavers, or paver pedestals.

#### Paver systems shall be installed in strict accordance with written instructions of Paver System Manufacturer. Install finish pavers, on adjustable pavers support pedestal and leveling shims as required, in accordance with Manufacturer’s recommendations and architectural layout.

## GREEN MODULES OVERBURDEN

### ROOT BARRIER REQUIRED FOR GREEN MODULES OVERBURDEN

#### Refer to drawings to determine location and placement of the specified root barrier.

##### Ensure waterproofing is fully cured for 24 hours or more before applying root barrier and subsequent materials.

##### Where specified, ensure protection course is in place prior to installing the root barrier.

##### Thoroughly inspect waterproofing and protection course, and make all necessary repairs, prior to installing the root barrier.

##### Unroll root barrier onto substrate, overlap all seams 12 to 24 inches at all laps.

##### Ensure root barrier is applied over, and beyond all surfaces exposed to potential root sources.

##### Tape all overlapping seams using specified seam tape, or hot-air weld seams.

##### Ensure there are no open laps nor exposed waterproofing surfaces prior to installing subsequent materials.

### DRAINAGE MAT

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### MOISTURE RETENSION BOARD/MAT

#### Refer to drawings to determine location and placement of the specified moisture retention mat.

##### Ensure waterproofing is fully cured for 24 hours or more before applying moisture retention mat and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the moisture retention mat.

##### Unroll moisture retention mat onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using moisture retention mat.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where moisture retention mat is specified.

### GEONET

#### Refer to drawings to determine location and placement of the specified geonet layer.

##### Unroll SOPRANATURE GEONET and cut to the desired length.

##### Ensure fabric is adhered at all joints and fold any excess fabric at ends under the core.

### PRE-VEGETATIVE MODULAR TRAYS REQUIRED FOR GREEN MODULES OVERBURDEN

#### Place Sedum modular trays directly over drainage layer or filter fabric and root barrier as specified.

#### Supply pre-planted with specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

## EXTENSIVE OVERBURDEN

### ROOT BARRIER REQUIRED FOR EXTENSIVE OVERBURDEN

#### Refer to drawings to determine location and placement of the specified root barrier.

##### Ensure waterproofing is fully cured for 24 hours or more before applying root barrier and subsequent materials.

##### Where specified, ensure protection course is in place prior to installing the root barrier.

##### Thoroughly inspect waterproofing and protection course, and make all necessary repairs, prior to installing the root barrier.

##### Unroll root barrier onto substrate, overlap all seams 12 to 24 inches at all laps.

##### Ensure root barrier is applied over, and beyond all surfaces exposed to potential root sources.

##### Tape all overlapping seams using specified seam tape, or hot-air weld seams.

##### Ensure there are no open laps nor exposed waterproofing surfaces prior to installing subsequent materials.

### DRAINAGE MAT

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### MOISTURE RETENSION BOARD/MAT

#### Refer to drawings to determine location and placement of the specified moisture retention mat.

##### Ensure waterproofing is fully cured for 24 hours or more before applying moisture retention mat and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the moisture retention mat.

##### Unroll moisture retention mat onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using moisture retention mat.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where moisture retention mat is specified.

### GROWTH MEDIA REQUIRED FOR EXTENSIVE OVERBURDEN

#### Install growing media material at depths required.

#### Use care during backfill operation to avoid damage to waterproofing membrane, protection board and drainage system.

#### Follow generally accepted practice for backfill and compaction. Backfill should be added in 4 in to 12 in (100 mm to 300 mm) lifts and should be placed as soon as possible after installation of the waterproofing membrane, drainage, insulation, and protection layers.

### GEONET

#### Refer to drawings to determine location and placement of the specified geonet layer.

##### Unroll SOPRANATURE GEONET and cut to the desired length.

##### Ensure fabric is adhered at all joints and fold any excess fabric at ends under the core.

### SEDUM TILES

#### Place Sedum Mats or sedum Tiles directly over prepared growing media.

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

### PLANTINGS REQUIRED FOR EXTENSIVE OVERBURDEN

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

## SEMI-INTENSIVE OVERBURDEN

### ROOT BARRIER REQUIRED FOR SEMI-INTENSIVE OVERBURDEN

#### Refer to drawings to determine location and placement of the specified root barrier.

##### Ensure waterproofing is fully cured for 24 hours or more before applying root barrier and subsequent materials.

##### Where specified, ensure protection course is in place prior to installing the root barrier.

##### Thoroughly inspect waterproofing and protection course, and make all necessary repairs, prior to installing the root barrier.

##### Unroll root barrier onto substrate, overlap all seams 12 to 24 inches at all laps.

##### Ensure root barrier is applied over, and beyond all surfaces exposed to potential root sources.

##### Tape all overlapping seams using specified seam tape, or hot-air weld seams.

##### Ensure there are no open laps nor exposed waterproofing surfaces prior to installing subsequent materials.

### DRAINAGE MAT

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### MOISTURE RETENSION BOARD/MAT

#### Refer to drawings to determine location and placement of the specified moisture retention mat.

##### Ensure waterproofing is fully cured for 24 hours or more before applying moisture retention mat and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the moisture retention mat.

##### Unroll moisture retention mat onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using moisture retention mat.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where moisture retention mat is specified.

### GROWTH MEDIA REQUIRED FOR SEMI-INTENSIVE OVERBURDEN

#### Install growing media material at depths required.

#### Use care during backfill operation to avoid damage to waterproofing membrane, protection board and drainage system.

#### Follow generally accepted practice for backfill and compaction. Backfill should be added in 4 in to 12 in (100 mm to 300 mm) lifts and should be placed as soon as possible after installation of the waterproofing membrane, drainage, insulation, and protection layers.

### GEONET

#### Refer to drawings to determine location and placement of the specified geonet layer.

##### Unroll SOPRANATURE GEONET and cut to the desired length.

##### Ensure fabric is adhered at all joints and fold any excess fabric at ends under the core.

### SEDUM TILES

#### Place Sedum Mats or sedum Tiles directly over prepared growing media.

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

### PLANTINGS REQUIRED FOR SEMI-INTENSIVE OVERBURDEN

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

## INTENSIVE OVERBURDEN

### ROOT BARRIER REQUIRED FOR INTENSIVE OVERBURDEN

#### Refer to drawings to determine location and placement of the specified root barrier.

##### Ensure waterproofing is fully cured for 24 hours or more before applying root barrier and subsequent materials.

##### Where specified, ensure protection course is in place prior to installing the root barrier.

##### Thoroughly inspect waterproofing and protection course, and make all necessary repairs, prior to installing the root barrier.

##### Unroll root barrier onto substrate, overlap all seams 12 to 24 inches at all laps.

##### Ensure root barrier is applied over, and beyond all surfaces exposed to potential root sources.

##### Tape all overlapping seams using specified seam tape, or hot-air weld seams.

##### Ensure there are no open laps nor exposed waterproofing surfaces prior to installing subsequent materials.

### DRAINAGE MAT

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping drain side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps using the fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### DRAIN PLATE

#### Refer to drawings to determine location and placement of the specified drainage mat layers.

##### Ensure waterproofing is fully cured for 24 hours or more before applying drainage mat.

##### Where specified, ensure protection course, root barrier and/or insulation layers are in place prior to installing the drainage mat layer(s).

##### Thoroughly inspect all materials and substrates prior to installing drainage mat(s).

##### Unroll drainage mat onto substrate, cut drainage mat evenly to conform to transitions, terminations, and penetrations.

##### Overlapping side and end laps.

###### Butt the drainage mats to create side and end-lap seams.

###### Fold-back top filter fabric layer and tuck the adjacent drainage mat under the lap to create side and end-laps with the filter fabric layer.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the drainage map/filter fabric laps, or apply adhesive sealant, as necessary to hold drainage mats in place during construction.

##### Interlocking side and end-laps:

###### Overlap the drainage mat to create side and end-lap seams.

###### Fold-back top filter fabric layer to expose side and end-laps. Expose 2 or more rows of dimples.

###### Snap the rows of overlapping dimples in place, fold filter fabric over the lap.

###### Strip-in drainage mat joints with specified filter fabric as necessary to fully conceal joints and all exposed drainage mat core.

###### Apply tape over the top surface of the laps, or apply adhesive sealant, as needed to keep drainage mats in place during construction.

##### At terminations, transitions, and penetrations, cut sufficient strips of the specified filter fabric to cover the end joint of the drainage mat as required to conform to conditions.

##### Ensure there are no open laps nor exposed substrate surfaces prior to installing subsequent materials over the drainage mat.

### FILTER FABRIC

#### Refer to drawings to determine location and placement of the specified filter fabric layer.

##### Ensure waterproofing is fully cured for 24 hours or more before applying filter fabric and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the filter fabric.

##### Unroll filter fabric onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using filter fabric.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where filter fabric is specified and required.

### MOISTURE RETENSION BOARD/MAT

#### Refer to drawings to determine location and placement of the specified moisture retention mat.

##### Ensure waterproofing is fully cured for 24 hours or more before applying moisture retention mat and subsequent materials.

##### Thoroughly inspect all substrates and make all necessary repairs and modifications, prior to installing the moisture retention mat.

##### Unroll moisture retention mat onto substrate, cut to conform to conditions.

##### Overlap all side and end-lap seams 6 in or more.

##### Where exposed gaps or insufficient overlaps exist, strip-in joints using moisture retention mat.

##### Use tape or adhesive sealant as necessary to hold filter fabric laps in place during construction.

##### Ensure there are no open laps nor exposed substrate surfaces where moisture retention mat is specified.

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### GEONET

#### Refer to drawings to determine location and placement of the specified geonet layer.

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##### Ensure fabric is adhered at all joints and fold any excess fabric at ends under the core.

### SEDUM TILES

#### Place Sedum Mats or sedum Tiles directly over prepared growing media.

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

### PLANTINGS REQUIRED FOR INTENSIVE OVERBURDEN

#### Supply and plant the specified vegetation as selected by the landscape architect or landscaping professional.

#### Water immediately after installation and consult maintenance guidelines for continued care.

## ACCESSORIES

### DRAIN INSPECTION CHAMBER

#### Inspection Chambers are applied over drains prior to application of media or ballast to protect the drain from becoming blocked by media or ballast.

#### Always install over a drainage layer to protect the waterproofing membrane. Filter fabric should be installed along the vertical drainage slots to prevent debris, media, or ballast from entering the Inspection Chamber.

#### Fit all drains with maintenance boxes or chambers extended above soil level to allow periodic inspection and cleaning of drains.

#### After installation, immediately install planting media or ballast to keep inspection chambers from movement or displacement.

### SOIL EDGE RESTRAINTS

#### Install the SOPRANATURE METAL EDGING directly over the drainage boards, overlapping edges by 1 in (25 mm).

#### Attach the edging pieces along the vertical face with a self-piercing stainless-steel screw at a 1/2 in.

#### For 10 and 12 in metal edging, material must have supporting screws on both sides, they cannot be free standing.

## CLEANUP & PROTECTION

### Visually inspect the work each day for debris, trash, and other housekeeping issues.

### Take corrective actions as required to maintain satisfactory work and site conditions.

### Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period.

### Protect all areas where waterproofing membrane, waterproofing accessories and vegetation have been installed.

END OF SECTION