BELOW GRADE LIQUID MEMBRANE WATERPROOFING

WOC 2020

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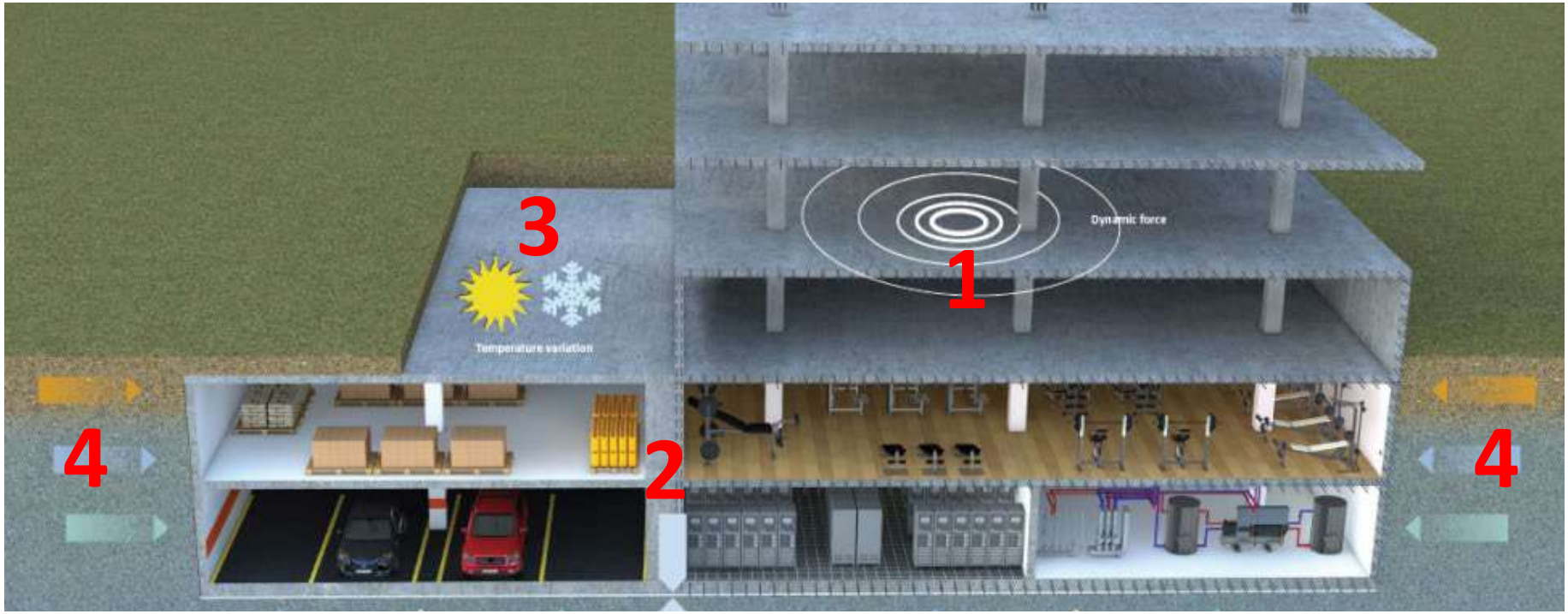
TYPICAL TYPES OF STRESS ON BUILDINGS



1 LIVE LOADS

2 DEAD LOADS

3 TEMPERATURE VARIATIONS

4 MOISTURE, WATER

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EXPOSURES AND STRESS ON BELOW GRADE STRUCTURES

Almost 80% of all complaints against builders relates to water penetration into the building and resulting damage.

The majority of these damages are because of the failure to waterproof efficiently .

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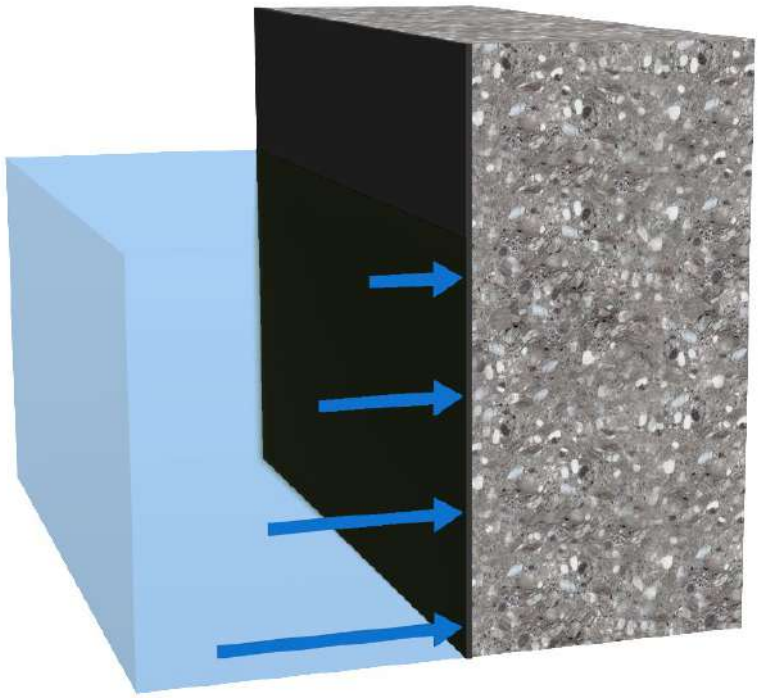
EXPOSURES AND STRESS ON BELOW GRADE STRUCTURES



Water intrusion into below grade structures can be stopped creating barrier – MEMBRANE

The most common and the most efficient place to place a membrane is a positive side of the wall so water is stopped before it touches the structure

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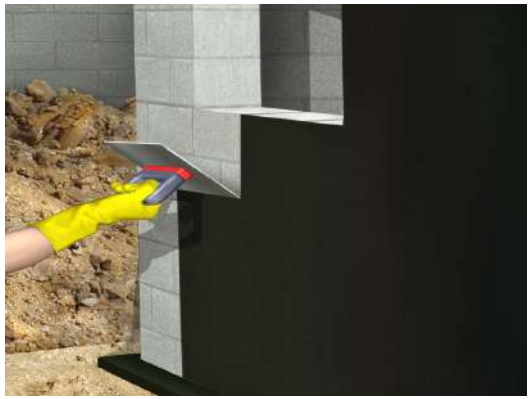
DIFFERENT TYPES OF BELOW GRADE WP MEMBRANES

- **Mineral-based systems -** bentonite clay (which expands when wet to protect concrete)
  - asphalt
  - crystalline waterproofing materials (which penetrate and seal)

- **Prefabricated membranes -**modified bitumen
  -elastomeric or thermoplastic sheets

- **Liquid-applied waterproofing -** hot applied
  - cold application systems to waterproof surfaces



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LIQUID APPLIED BELOW GRADE WP MEMBRANES

ADVANTAGES :

- Low VOC
- Outstanding physical properties
- Alkali resistant
- Superior tensile strength
- Excellent crack bridging abilities
- Flexible in all weather conditions
- Seamless application
- Fully bonded system

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CHECKLIST

THINGS TO BE CONSIDERED BEFORE DECISION TO USE LIQUID APPLIED WP MEMBRANE

- ❑ Weather conditions
- ❑ Substrate conditions
- ❑ Applicator experience - Training
- ❑ Product

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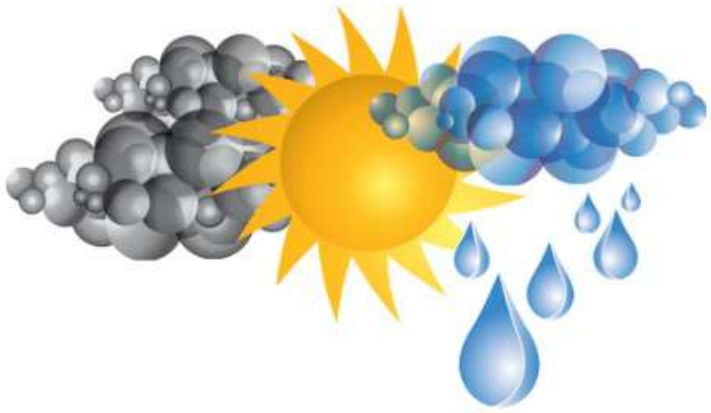
☑ Weather conditions

- Minimum ambient temperature 41°F
- Maximum ambient temperature 95°F
- Maximum relative humidity 95%
- Avoid direct sun
- Do not proceed if rain is imminent within 8–12 hours of application



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☑ Substrate conditions

- Substrate temperature must be at least 5°F above measured dew point temperatures
- Dry, free of dust, laitance, grease and any other contaminants
- Sufficient compressive and tensile strength
- Minimum temperature 41°F
- Maximum temperature 95°F
- CSP 2-4

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☑ Applicator experience - Training

- LAM should not be installed by contractor with no LAM experience
- Training is important to understand the entire application process
- Warranty requires trained applicator

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☑Product

Successful application is conditional on choosing the right product.

Product specification :

ASTM C 836 – Standard specification for Cold Applied Elastomeric Waterproofing Membranes

Product testing :

ASTM E 96 – water vapor transition

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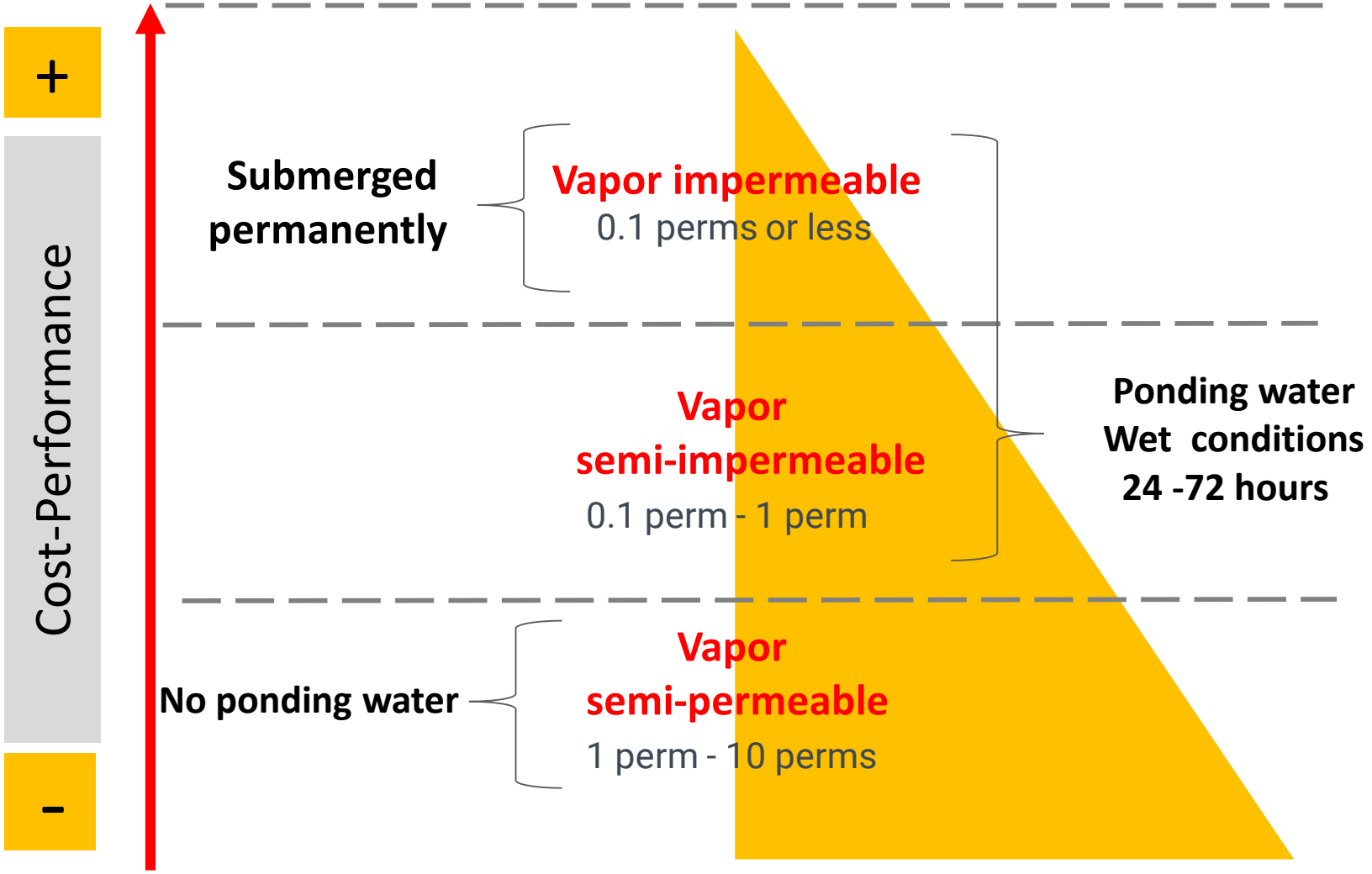
POSITIONING



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Optimal performance of liquid applied below grade waterproofing membrane requires proper water management including proper drainage on a waterproofing membrane level and proper use of pitched or sloped substrate.

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TYPES OF WATERPROOFING APPLICATIONS

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LIQUID APPLIED BELLOW GRADE WP MEMBRANES

- Between Slabs
- Foundation Walls
- Planters
- Plazas

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COMPONENTS OF BELOW GRADE WATERPROOFING SYSTEM AND INSTALLATION

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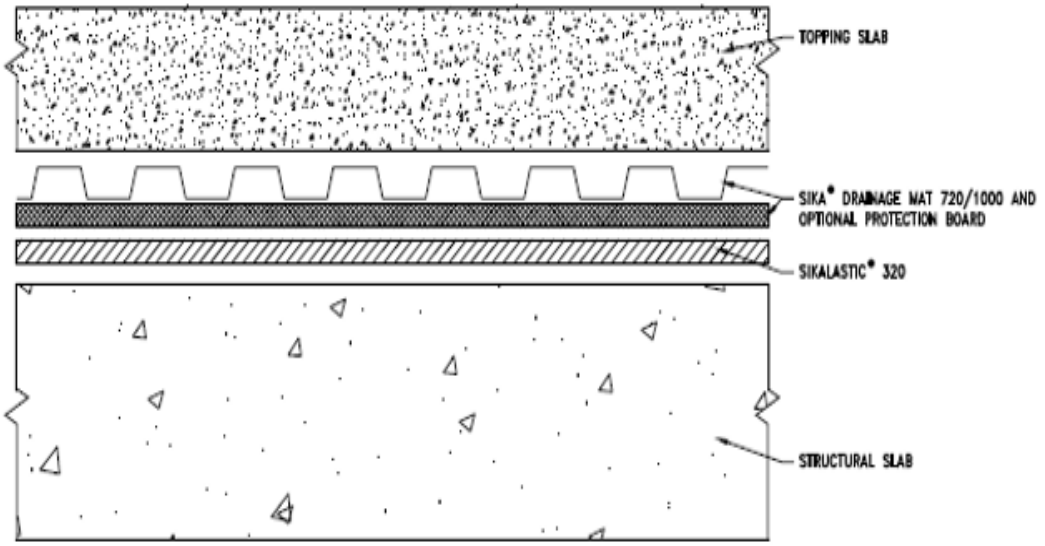
Components of waterproofing system :

- Drain mat
- Protection board
- Waterproofing membrane
- Primer



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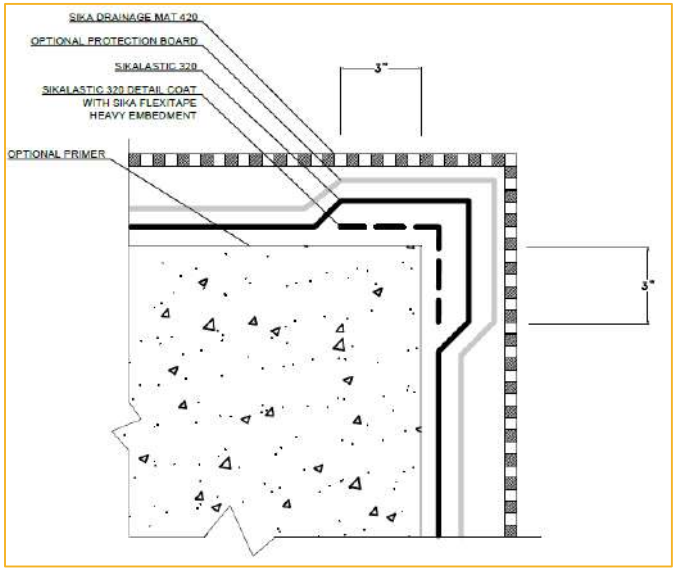
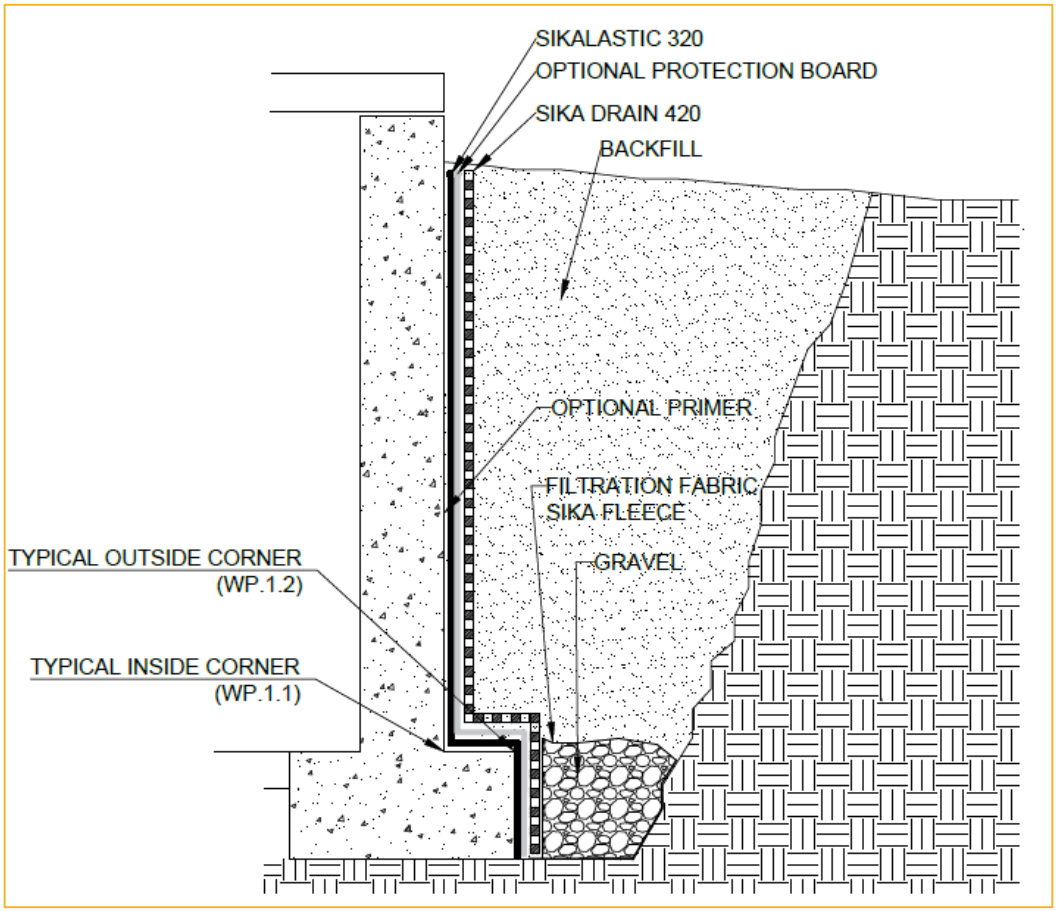
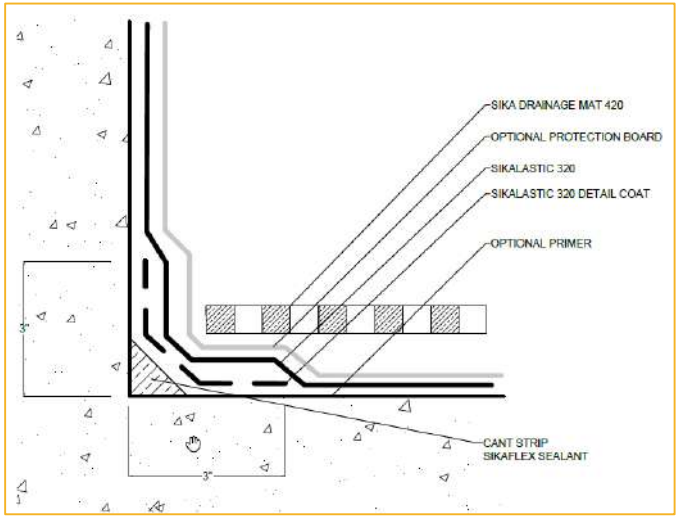
DETAILS







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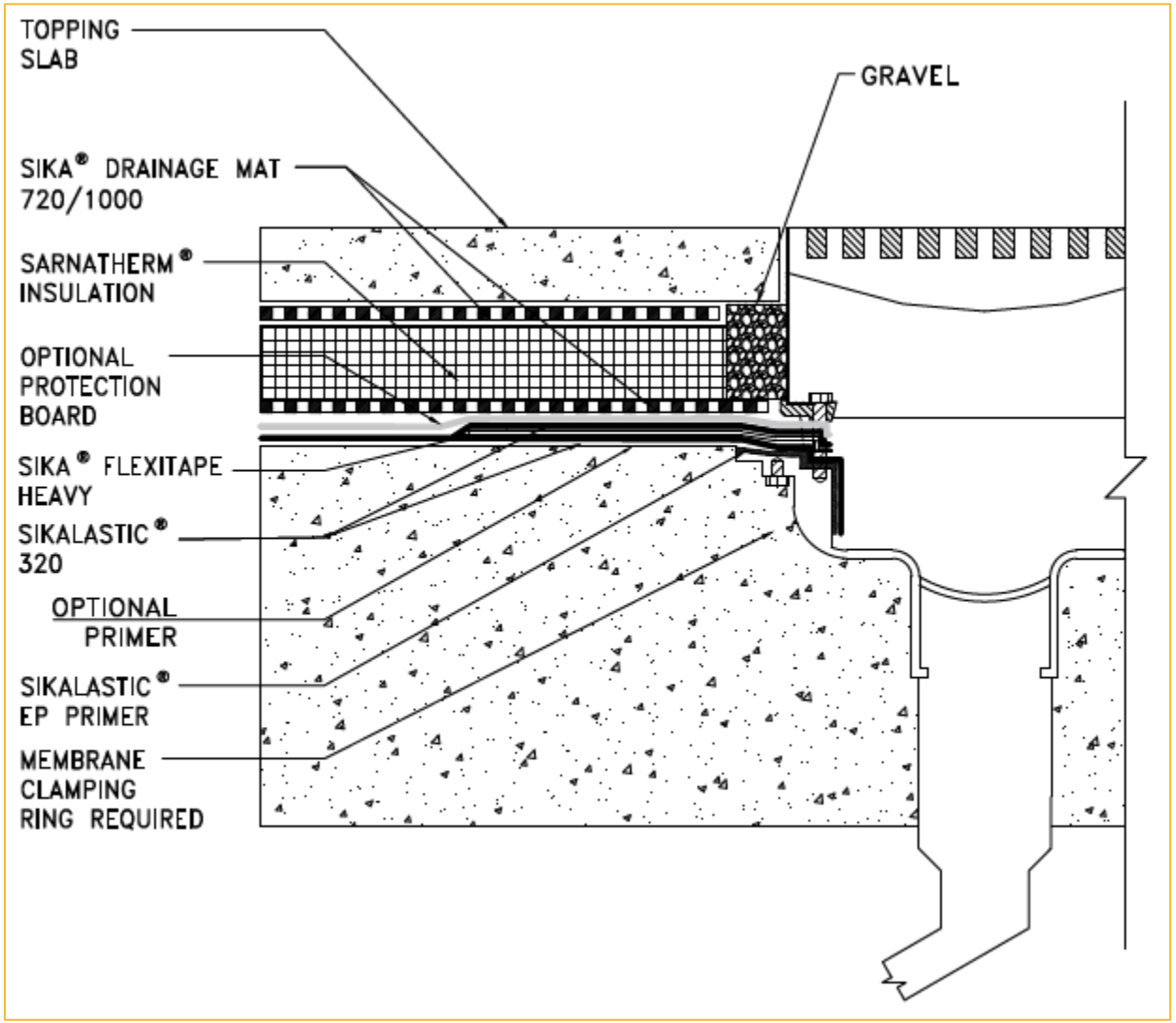

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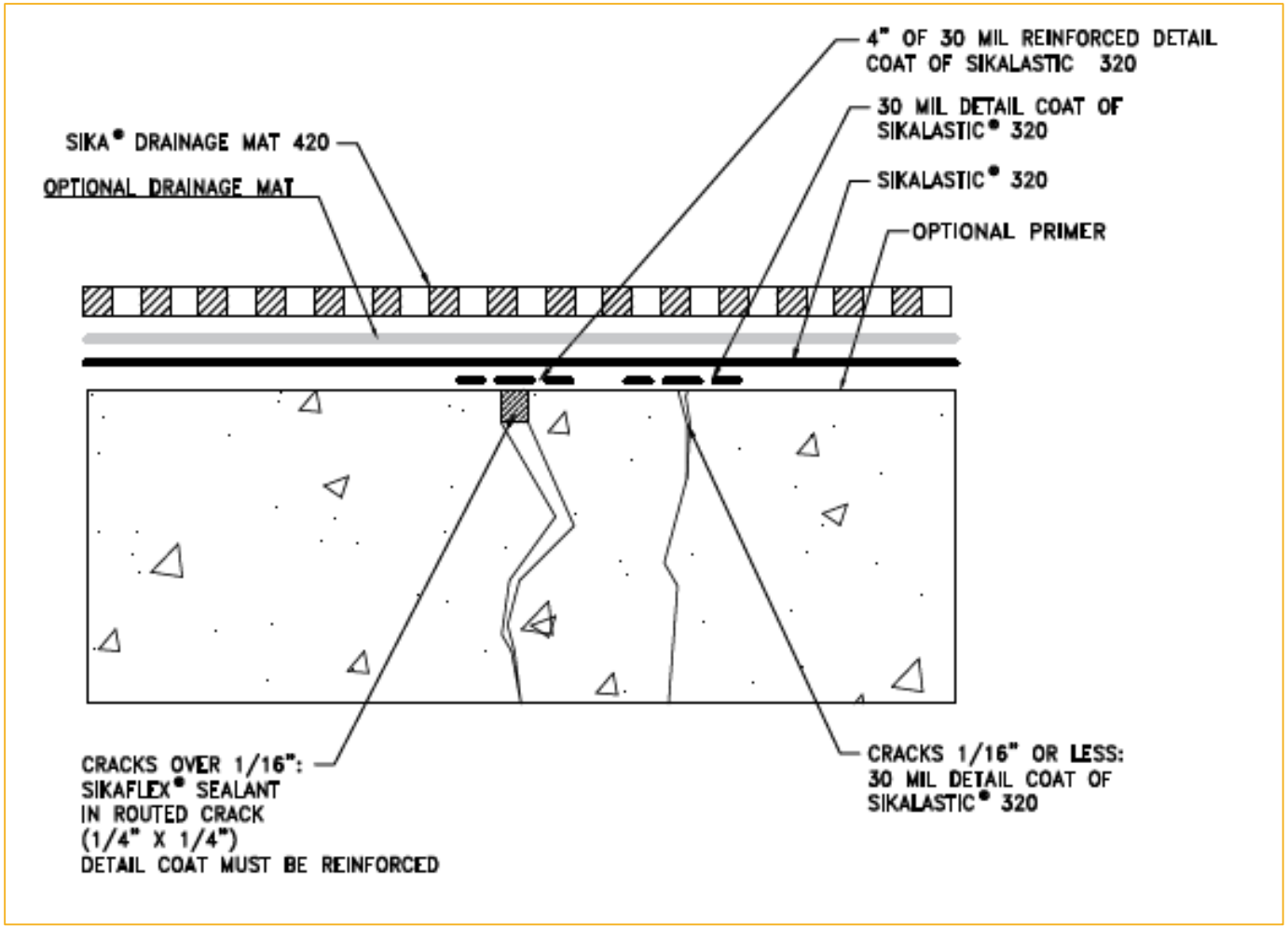
MORE DETAILS! Ability to customize to a project is important



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PREPARATION

- Concrete must be sound, free of bond-inhibiting contaminants, dry or damp
- Allow 48 hours for new slabs to cure and 24 hours after stripping forms before coating
- Substrate temperatures should be between 40 – 110F
- Avoid applying in direct sunlight or other vapor drive prone conditions
- If old asphaltic coating exists, remove to ‘ghost’ and prime with epoxy primer

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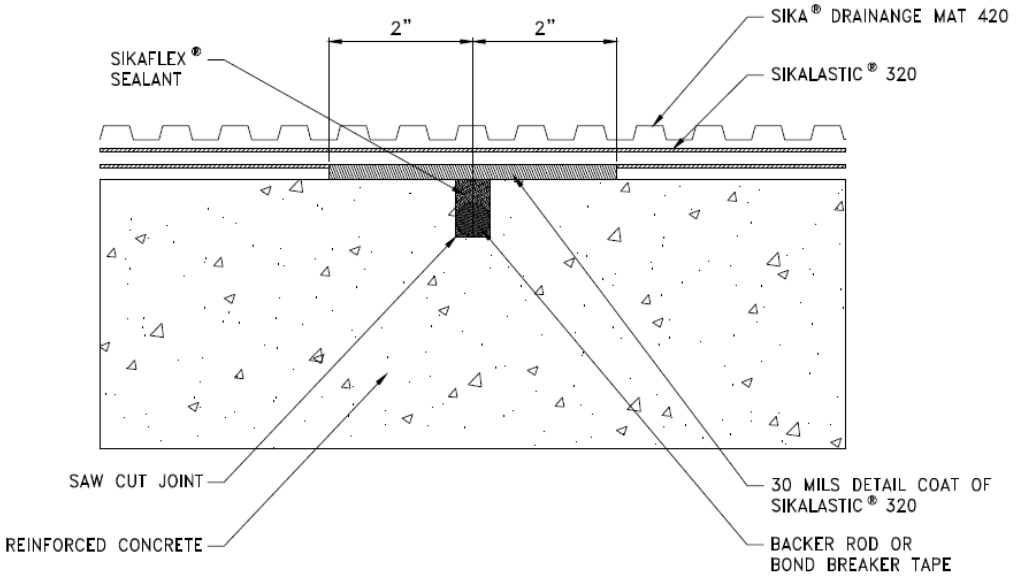
PREPARATION

- Apply 4” wide 30 mil detail coat of waterproofing to cracks < 1/16”
- Rout cracks >1/16” to at least ¼” by ¼” and seal with pu sealant
- After is tack-free (~ 3 hours) apply the 4” wide 30 mil detail coat.
- Also seal all joints and coves with pu sealant



Sealant Options	Substrate	Tack-free
Sikaflex 1a	Dry or damp	~ 3 hours
Sikaflex 11 FC	Dry	~ 1-2 hours
Sika Hyflex 150 LM	Dry	< 1 hour

MIXING

- Mix 1 pint (16 oz) water to the 5 gallon pail of waterproofing for 3 minutes
- Use low speed drill and jiffy paddle
- Avoid entrapment of air and do not use up and down pumping action
- Apply within 20 minutes of mixing
- Cures in 2 - 4 hours
  (16 hours without mix water)

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INSTALLATION

- Roll, brush, squeegee, trowel, or spray apply
- Install 40-90F

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SPRAY APPLICATION

- Roll, brush, squeegee, trowel, or spray apply
- Install 40-90F

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FLOOD TEST

- After minimum 4 hours of curing conduct flood test
- Plug drains and flood with 2” water head for 24 hours
- Check for leaks, make any repairs immediately & then retest

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PROTECTION

- Protect as soon as possible
- Do not allow more than 14 days exposure to UV
- Install protection board or
- Drainage Mat

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DRAINAGE MAT PROTECTION

Mat	Usage
A	Soil, sand, or stone ballast.
B	New concrete or grout. Capable of pedestrian traffic.
C	Pedestrian and vehicular traffic.
GRS	Potential contact with roots.

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PROTECTION

- Install appropriate drainage mat
- Weigh down or adhere with sealant

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PROTECTION

- Drainage mats provide protection, filter, allow water flow to prevent immersion

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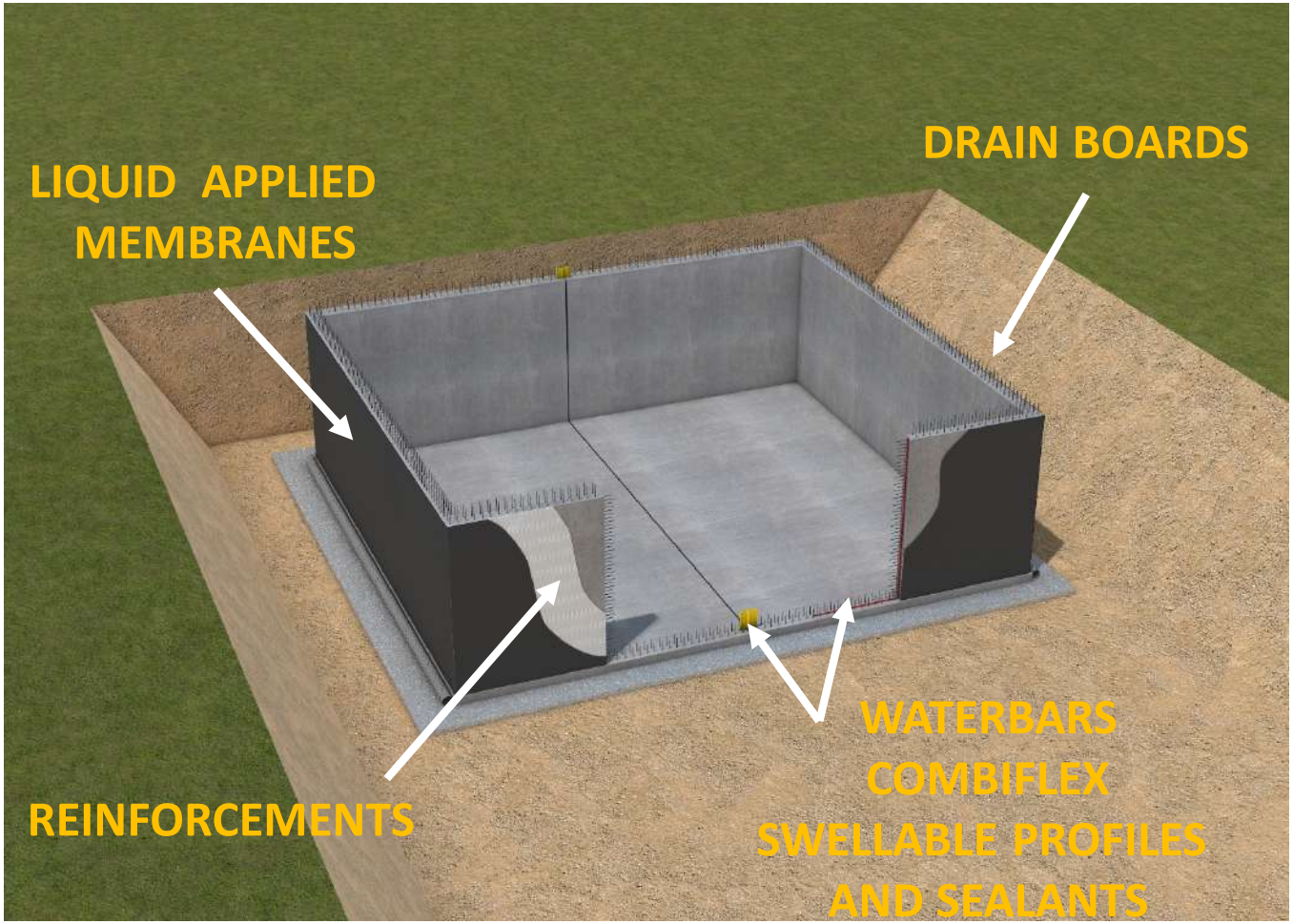
BELOW GRADE WATERPROOFING IS A SYSTEM TOGETHER WITH ACCESSORY PRODUCTS



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ON TOP OF LAM SIKA ALSO OFFERS A COMPLETE BELOW GRADE WATERPROOFING SOLUTIONS UTILIZING SINGLE PLY SHEET MEMBRANE INCLUDING PEEL AND STICK MEMBRANES OR FULLY BONDED PRE APPLIED SYSTEMS.

WE WILL BE HAPPY TO MEET YOU AT OUR
BOOTH # S10715
AND DISCUSS WITH YOU ANY QUESTIONS

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THANK YOU

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