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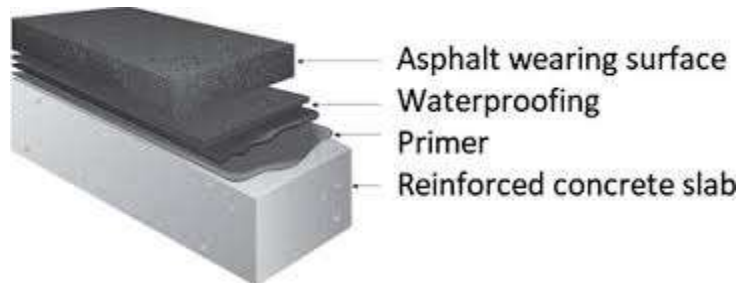
Waterproofing of Bridge Decks with APP Modified Polyester sheet Reinforced Bituminous Membrane (3mm).

Bridges are important infrastructure facilities connecting different areas and allowing smooth movement of men, material and machinery from one place to another. Roads have no purpose unless bridges are provided for crossing rivers. Railway lines (ROB), highways (Flyovers) etc. Early deterioration of cement concrete bridge structures resulting into weakness or even part collapses disturb the movement of traffic and has serious impact over social and financial status of the local society. Minor causes like leakage and seepage of water or deicing salt solution into even the slightly permeable deck concrete surface result into corrosion of reinforcing steel which result into spalling, cracking and loss of section of structure.

The problem can be solved to a great extent if concrete surface is protected against ingress of moisture and salts. In other words, if a protection layer is introduced over the bridge deck concrete surface in form of a dependable water proofing system.



Bridge Decks: Waterproofing



The waterproofing of bridge decks is recognized as a vital and necessary operation to enhance the durability and longevity of the life of bridge.

It represents the first line of defense and prevents the ingress of water, road de-icing salts, and aggressive chemicals which would corrode the steel reinforcing bars in the concrete causing severe structural damages.

Concrete will always have some degree of porosity and allied with surface wear and hair line cracking, will allow water and corrosive materials to penetrate and attack the steel reinforcement. The primary defense against such destructive agents is good dense concrete, along with a proven waterproofing system installed by a qualified contractor.

Following is the Bridge deck waterproofing system :

Sheet Systems : These are Polymer Modified Bituminous sheets bonded to the bridge deck, using torch application. Manufacturers have developed this system that would satisfy the enhanced requirements of the bridge deck waterproofing market.

Performance Requirements for the System

Independent of the bridge deck waterproofing system choice, certain performance criteria has to be met in order to avoid potential concerns regarding leakage, poor bonding, embrittlement or softening of the membrane in service.

Such performance criteria are:

- Impermeability to water under all conditions
- Good adhesion to deck
- Good adhesion to surfacing.
- Capable of bridging shrinkage cracks in concrete
- High mechanical properties to handle traffic loads including shear forces in curves and during braking and accelerating
- Tolerant of deck texture and details
- Tough to withstand site damage and operation
- Safe to apply
- Able to withstand elevated surface temperatures
- Can be applied over a wide range of ambient conditions
- Nondegradable
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Proper Site Practice the key Success

Bridge Deck Waterproofing System

Bridge Deck Waterproofing System consists of five layers of fully torch welded heavy duty APP modified bitumen membranes with composite polyester reinforcement, applied on a primed substrate.

System Application:

- Concrete surface must have a minimum acceptable gradient to ensure water drainage on the surface of the asphalt pavement.
- A primer coat must be applied to concrete deck to seal the voids, promote W.P. adhesion, and assure against blister formation.
- Prior to membrane application, make sure that the primed surface is tacky and sufficient time has elapsed as per weather conditions to achieve the desired tackiness.
- On the primed surface, start laying of membrane at lowest point of the slope surface and progress to the higher point.
- Unroll the membrane half-way, align the side laps and fix membranes by using a LPG torch and applying uniform pressure with a roller / wet cloth to ensure to remove entrapped air, if any.
- Flame should be moved in shape of “L” applying about 75 percent of the heat to the roll and 25 percent to the substrate including the lap area of previously installed membrane.
- The flame should be moved across the width and upto the lap edge while membrane is slowly unrolled and adhered to the under lying surface.
- Heat both layers of membrane at the overlap and use round tipped hot trowel to seal overlap.
- Excess compound should be smoothed and pressed into seam using hot trowel.

- Overlap joint shall be provided of 100 mm in longitudinal direction and 100 mm in transverse direction.
- Waterproofing must be protected against sunlight until asphalt layers, of drainage, protective and wear courses are applied. It is recommended to apply the asphalt layers as soon as possible.
- Thickness and mix design of asphalt courses are as per consultant and project specifications.
- Bridge deck joints must be filled up (Grouted) and completed with recommended expansion joints system.

Our company SRM-j Infra Private Ltd has achieved great reputation for its products and services it offers to its clients. The products are being used in almost all corners of Maharashtra due to our high quality, reliability, uniformity in Quality and successful performance.

