



## Case Study

### Fibertex AM2 in Asphalt Overlays in Chakdah Bongaon Highway

Owner: **National Highway Authority of India**  
 Main Contractor: **ALS-MBL (JV)**  
 Sub contractor: Coal Mines Associate Traders  
 Area: 2,05,000 sqm.  
 Location: Chakdah-Bongaon Highway, Nadia, West Bengal

Fibertex AM2 has been used in an ADB funded project in Chakdah – Bongaon Road, in West Bengal. 30 km road pavement with a width of 10m is finished with Fibertex AM2 and asphalt overlay. Now the road is working under heavy traffic.

Fibertex AM2 is in accordance to AASHTO M-288, made from polypropylene fibres, is a flexible needlepunched nonwoven fabric added thermal bonding on one side only. The main function of Fibertex AM2 is to avoid reflective cracking of new asphalt and protect the subsoil from water intrusion and thereby loss of bearing capacity. The waterproofing function prevents surface water from entering the bearing courses. Therefore, this method increases the overlay and roadway life, increases pavement serviceability, decreases roadway maintenance cost. Fibertex AM2 can be used in new road construction as well as in existing road maintenance.

In the above case, Fibertex AM2 was used in new road construction. A bituminous tack coat was provided over the asphalt base course. Then the paving fabric (Fibertex AM2) was laid over the tack coat. Finally 50 mm thick asphalt overlay was provided over the paving fabric.

The asphalt base course is cleaned thoroughly to remove dirt, oil, water and other impurities. Hot melted bitumen is sprayed over the base course by a tanker. Penetration grade of the bitumen is about 80 (as the temperature is around 30°C). The applied quantity of bitumen is 1200 g/m<sup>2</sup>. The temperature of the tack coat is about 140°C. Any spillage or excess tack coat should either be removed or sand be sprayed over it.

The paving fabric (Fibertex AM2) is unrolled over the tack coat. The unrolling was done manually. But it can be done mechanically also. The paving fabric is placed with heat treated side facing up. The unrolling is done carefully to minimize wrinkles. At the curvature of road, the fabric is laid carefully to avoid wrinkles. Once the fabric gets



**Spraying Tack Coat**



**Manual unrolling of AM2**

attached to the bituminous tack-coat, then it is not possible to separate the fabric from tack-coat. Wrinkles or folds in excess of 25 mm shall be slit and laid flat. Brooming is required to maximise paving fabric contact with the pavement surface. The overlapping is provided 10 cm in longitudinal direction and 20 cm in transverse direction. Overlaps are added extra tack-coat in between the layers. No traffic except necessary construction equipment is allowed to drive on the paving fabric. All areas in which paving fabric has been placed will be paved the same day.

Asphalt overlay (50 mm thick) on the paving fabric is done immediately after the installation of the paving fabric. The retention heat of the hot asphalt material paved on top of the paving fabric must be sufficient to soften the underlying bitumen to ensure maximum saturation of the fabric. Standard hot mixed asphalt materials have plant temperatures varying between 140 -170°C, which are suitable temperatures for paving fabrics made from polypropylene. If the temperature of the asphalt material exceeds 170°C, a small quantity of the asphalt material should be spread manually before paving to protect the paving fabric. If crawlers or vehicle tyres stick to the paving fabric they may damage the fabric. To avoid this, some asphalt material has to be spread in the wheel tracks. When backfilling asphalt material in front of the asphalt paver, the truck driver must not use the brakes and must avoid any unnecessary driving at longitudinal overlaps and in spots with plenty of bitumen.



**Paving with asphalt concrete**



**road view after 6 months**



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