KANTA FLEX
TECHNOLOGY DECADE AHEAD

STRIP SEAL EXPANSION JOINT

Kanta System of strip seal expansion joint will have the components of edge beams, rigid anchorage and chloroprene strip seal.

EDGE BEAM:
It is made by extruded process (or) hot rolled steel section (or) cold rolled cellular steel section, with suitable profile to mechanically lock the sealing element in place, throughout the normal movement cycle.

- The minimum thickness of edge beam, all along its cross section including flange & web will be 10mm.
- The minimum thickness of the lips holding the seal will be 6mm.
- The minimum height of the edge beam section will be 80mm.
- The minimum cross sectional area of the edge beam will be 1500mm2 per meter.

ANCHORAGE:

The edge beam will be anchored to the deck by reinforcing bars or anchor plates cast in concrete (OR) a combination of anchor plates and reinforcing bars, anchor bars shall engage main structural reinforcement of the deck. In case of anchor plates / loops, this shall be done by passing transverse bars through loops/ plates.

- The minimum thickness of the anchor plate will be 12mm.
- The minimum total cross sectional area of the bar on each side of the joint will be 1600mm2 per meter.
- The space between centers to center shall not exceed 250mm
- The ultimate load resistance of each anchorage shall be not less than 650KN/mm in any direction.

SPECIFICATION OF STEEL:

- The edge beam steel will conform to ASTM A 36 (or) ASTM A 588 (or) equivalent.
- The anchorage steel will conform to IS: 2062 or equivalent.
- All the steel sections coated with approved anti-corrosive chemical with minimum thickness of 100microns (OR) they will be protected against corrosion by hot dip galvanizing.

CHLOROPRENE SEAL:

- It is extruded section of chloroprene elastomer of such a shape as to promote self-removal of foreign material during normal service operations.
- Chloroprene elastomer is used to manufacture such seals and they are with low crystallization rates and adequate shelf life. Generally Neoprene WRT, Bayprene 110, Skyprene B5 and Denka S 40V are used as raw material of Chloroprene elastomer.
- The physical properties of the elastomeric seal will be as follows: -

-Hardness: 63 (+/-) 5 in shore A scale
-Tensile strength: 11Mpa Minimum
-Elongation at break: 350% Minimum
-Tear Propagation strength:
Longitudinal: 10N/mm Minimum
Transverse: 10N/mm Minimum
Shock elasticity: 25% Minimum
Abrasion: 220mm3 Minimum
-Residual Compressive strain
22 Hours/ 70degree C/ 30% strain: 28% Maximum
-Ageing in hot air (14 days at 70degree C)
Change in Hardness: +5 in shore A
Change in tensile strength: - 20% Maximum
Change in elongation at break: - 20% Maximum
-Ageing in ozone
24 hours/ 50pphm/ 25 degree C/ 20% elongation: No cracks
-Swelling behavior in oil (168hours at 25degree C)
ASTM oil no: 1
Change in volume: +5% Maximum
Change in hardness: - 10 shore A Maximum

ASTM oil no: 3
Change in volume: +25% Maximum
Change in hardness: - 20 shore A Maximum
Cold hardening point: - 35% Maximum

FABRICATION (PRE-INSTALLATION)

- The entire strip seal joint system and all its component parts including anchorages will be supplied by Kantaflex (India) Pvt Ltd.

- The width of the gap to cater for movement due to thermal effect, pre-stress, shrinkage and creep, super-structure deformations and substructure deformations are to be pre-determined and informed in advance, to enable the manufacturer to preset the gap dimension and temperature at which the joints to be installed.

- Each strip seal expansion joint system will be fabricated as a single entity unless stage construction or excessive length prohibits monolithic fabrication.

- The manufacturer, as per the approved drawing, will preset the entire joint system and the presetting will be done in accordance with joint opening indicated in the drawing.

TEST CERTIFICATE

- Kantaflex (India) Pvt Ltd have got full-fledged testing laboratory to carry out all the required tests as stated above, and they will furnish complete test reports along with every consignment.
- If required the tests can be witnessed by the authorized officials of the project site.
- If required test certificate can be furnished from the recognized testing laboratory.

TEST CERTIFICATE

- To install the strip seal expansion system at project site, Kantaflex will provide necessary assistance and to ensure the compliance of installation procedure and instructions.
- The width gap for movement to be designed in accordance with approved drawing or as per manufacturer's recommendation.
- The recess to be shuttered such a way that the dimensions in the joint are maintained as per requirement. The foam work shall be rigid and firm.
- Prior to installation, the presetting to be inspected in respect of actual temperature of the structure and steel structure presetting temperature. If any difference is noticed the brackets are to be adjusted by tightening.
- The joint to be lowered in a pre-determined position. The placement of the joint in the prepared recess to be leveled and finally aligned and the anchorage steel on one side of the joint welded to the exposed reinforcement bars of the structure.
- The similar procedure to be adopted for other side of the joint installation. On completion of expansion joint installation, the auxiliary brackets are to be released allowing the joint to take up the movement of the structure.
- High quality of the concrete (M35 or superior grade) to be filled into the recess. The concrete should have low shrinkage and should have the same strength of the super structure. Good compaction and proper curing of the concrete is must and important.

- When the concrete has been cured properly, the installation brackets and shuttering are to be removed.
- The elastomeric strip seal shall be field installed in continuous length spanning the entire road width. Before installing the elastomeric strip seal, the steel cavities are to be cleaned and to be ensured that there is no dirt, spatter, water logging, in order to have proper fitment.
- The elastomeric strip seal to be inserted/ installed into steel cavity without any damage to the seal by suitable hand method or by using the proper machine tools.
- Once the concrete recess has become initially set, a sturdy ramp shall be placed over the joint to protect the exposed steel beams and the elastomeric seal from the site traffic.
- Expansion joint shall not be exposed to the traffic before the carriage way surfacing is placed.
- The carriage way surfacing shall be finished flush with top of the steel sections. The junction of the surfacing / wearing coat with the steel edge section shall be formed by a wedge shaped joint with a sealing compound.
- It is important to ensure thorough and care compaction of the surfacing in order to prevent any premature depression forming in it.