



Kanta Rubber Pvt Ltd

HANDLING & STORAGE METHODOLOGY OF POT cum PTFE BEARING (Ref. STD. IRC: 83 Part III - 2018)

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Handling

- Bearings shall be handled using cranes, forklifts, or chain pulley blocks with nylon slings or padded lifting hooks.
- Do not drop, drag or roll the bearings on hard, even, or uneven smooth surfaces. Bearings must be carefully handled and placed gently on a clean and smooth surface.
- Chains, wire ropes, or sharp tools must not come in direct contact with the bearing surface.
- Bearings must not be exposed to welding sparks, flame cutting, or impact loads.

Storage

- Bearings shall be stored on a flat, level, clean, and stable platform (concrete or wooden) as shown in Fig. (ii)

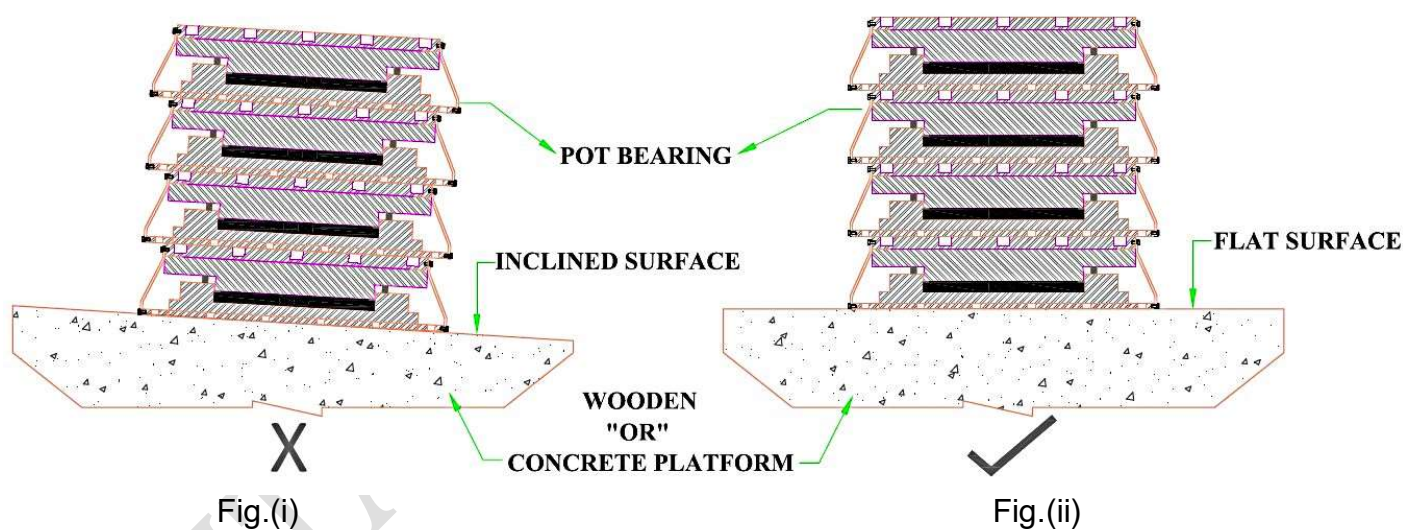


Fig.(i) Indicates inclined Surface

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Fig.(ii) Indicates Flat Surface

- Storage shall be in a covered, well-ventilated shed, away from direct sunlight, rain, dust, or standing water.
- Bearings shall be kept in their original protective packing until installation.
- Storage area shall be free from chemicals, petroleum products, and ozone-producing equipment.

1. Bearings should be installed with care to ensure their correct functioning in accordance with the design for the whole structure. Bearings shall be so located as to avoid accumulation of dirt and debris likely to interfere with their performance and the structure so detailed that water is prevented from reaching the bearings. Proper installation of bearing is of utmost importance to ensure proper functioning of bearing and its durability. Poor installation may not only damage a high-quality bearing but also may cause damage, instability and collapse of structures. (A proper Installation Diagram Shown in Fig. (i)).

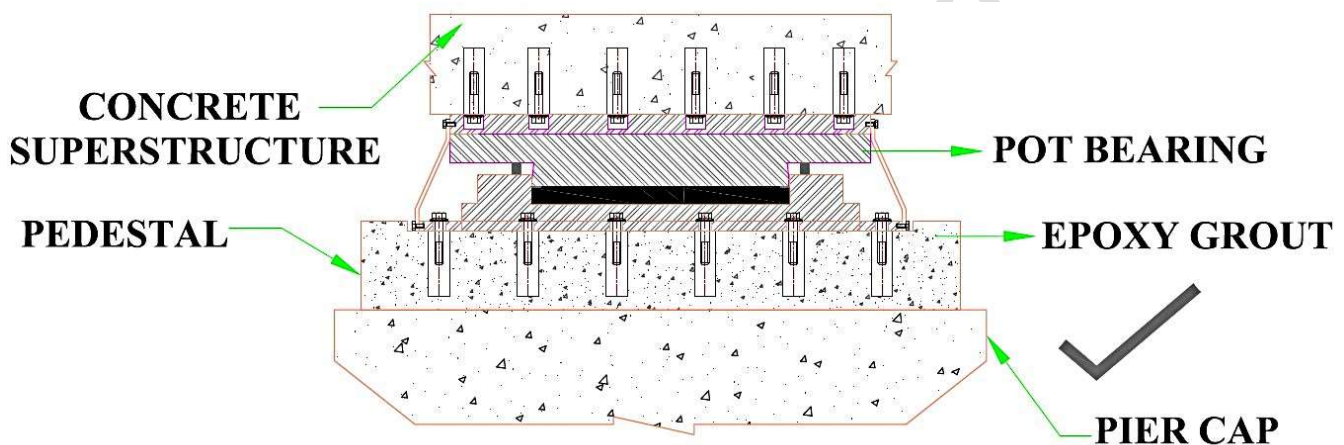


Fig.(i) Bearing After Installation.

2. Transfer of superstructure weight on to bearings should not be allowed until sufficient strength has been developed in the bedding material to resist the applied load. Temporary damping devices should be removed at an appropriate time before the bearings are required to accommodate movement. Consideration should be given to any treatment required to holes exposed on the removal of temporary transit clamps.
3. Correct location and orientation of the bearing with respect to the structure is of immense importance. Mixing up in location or orientation may cause severe structural instability during construction and service.
4. Bearing shall not be placed directly on matured concrete surface without use of appropriate bedding material.

5. To cater for vibrations and accidental impacts, suitable anchorage shall be provided. The anchorage components shall be accurately positioned into recesses cast in the structure using appropriate templates. After placement, all remaining voids in the recesses shall be filled as Shown in Fig. (iii).

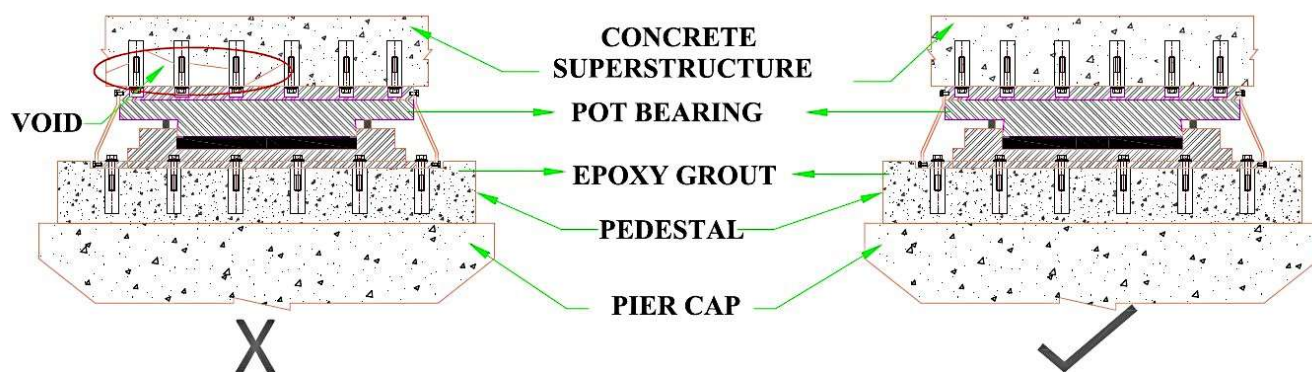


Fig.(ii) Voids at contact Surface
Of Bearing

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Fig.(iii) Contact Surface of Bearing
without Voids

6. Bearings may be fixed directly onto metal bedding plates, which can either be cast into or bedded on the top surface of the supporting structure or on the bottom of the superstructure, ensuring correct level and alignment. It is not advisable to fix the foundation anchorages simultaneously to both the substructure and the superstructure, as this may lead to stress or misalignment due to construction tolerances in span length. Generally, suitable recesses are provided in the substructure to accommodate the anchorages.
7. If the structure is of steel, the bearings may be bolted or welded directly to it. Proper care shall be taken to ensure that there is no mismatch in the bolt holes of the structure and the bearing. In case of welding, care should be taken between to assess and avoid damage of bearing or its components due to heat or distortion.
8. Threaded fasteners shall be tightened uniformly to avoid overstressing of any part of the bearing.
9. For bearings supporting precast concrete elements, a thin layer of synthetic resin mortar shall be applied between the bearings and the precast concrete beams to ensure uniform contact. The bearings shall be bolted to anchor plates or metal bedding plates embedded in the precast elements.

10. For grouting, it is a general practice to use a mix comprising approximately 70% concrete and 30% mortar grout to achieve the desired bedding strength and stability.

11. Where the superstructure has a lateral or longitudinal slope, it is advisable to provide a wedge plate between the bottom surface of the superstructure and the top surface of the bearing to ensure uniform bearing contact and proper load distribution as shown in Fig.(v).

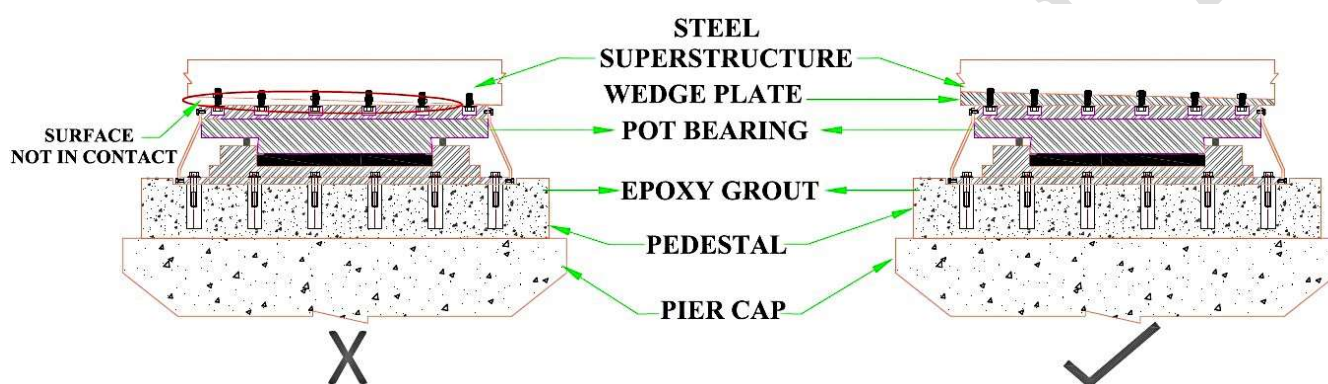


Fig.(iv) Bearing without Wedge Plate
(Surface not in Contact)

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Fig.(v) Bearing with a Wedge Plate

12. After successful installation of the bearing along with the girder, the transport brackets shall be removed to ensure proper functioning of the bearing. For removal of transport brackets, only a grinder cutting machine shall be used; gas cutting or welding methods shall be strictly avoided.



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ROUTIENE MAINTENANCE OF POT cum PTFE BEARING (Ref. STD. IRC: 83 Part III - 2018)

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1. The surrounding area of the bearings shall always be kept clean and dry to avoid damage to the bearings. Suitable easy access to the bearing shall be provided for inspection and maintenance. It is advisable to provide adequate maneuvering space all around the bearing. Provision shall be made for jacking up the superstructure so as to allow repair / replacement of the bearings.
2. Inspection of bearing at site is required from time to time to ascertain the performance of the bearings. Periodic nominal maintenance of bearing shall be carried out in order to ensure better performance and longer life of the bearings. The bearings are required to be inspected at an interval of one year for the first five ears and at an interval of two years thereafter. However, the bearings shall also be examined carefully after unusual occurrences like heavy traffic, earthquakes, cyclones and battering from debris in high floods.
3. During inspection at site, measurements are required to be taken and documented to compute its movement and rotation values in relation to their design values to ascertain whether the performance of the bearings is satisfactory. To ascertain maximum movement, measurement should be taken once during peak winter (early morning) and once during peak summer (afternoon) and corresponding atmospheric temperature should be recorded. The recorded value of movement shall be compared with the design values.
4. If any movable or rotating part of a bearing is found to be in locked-in / jammed condition, necessary rectification measures shall be taken immediately.
5. The adjacent structure of the bearing is also required to be inspected for any damage and necessary actions to repair the same, should be taken immediately.
