

TYPICAL BEARING INSTALLATION DETAILS BASED ON AASHTO/BS & DIN REGULATIONS

Installation - Pot Bearings

581.3.05 Construction

A. Erection

Place bearings at their proper locations before erecting the superstructure supported by the bearings.

1. 1. Install Pier Tops

Install pier tops horizontal at the correct elevation with a plus or minus tolerance of zero. Do not install the masonry plates until the Engineer accepts the pier tops.

2. 2. Install the Anchor Bolts

Cast anchor bolts in the concrete or set them in preformed holes, unless otherwise shown on the Plans. If setting them in preformed holes, fill the preformed holes in the concrete substructure with epoxy grout.

a. a. Insert the anchor bolts to the prescribed depth.

b. b. Place additional grout as required in the annular space around the anchor bolts until the grout is well packed and flush with the top surface of the concrete.

c. c. Wipe clean the exposed surfaces of the anchor bolts and substructure. Do not allow a load on grout that has not been in place at least 7 days.

3. 3. Install Masonry Plates

Set the masonry plates to the proper elevation on the previously finished concrete pads.

4. 4. Install the Bearings

d. a. Place the bearing at the predetermined locations when erecting the superstructure.

e. b. Remove the temporary restraints as directed by the bearing manufacturer.

f. c. Adjust the bearings as follows:

- • Adjust the expansion bearings from the normal position at 60 °F (15 °C) to allow for the ambient temperature during erection or casting.

- • Adjust the pot bearings to allow them to move when dead loads are applied. Ensure that the bearing is properly positioned and parallel (free from rotation) after applying the dead load.

- • Adjust the bearings horizontally on the masonry plate to properly fit the superstructure members being erected.

g. d. After adjustments and approval by the Engineer, weld or bolt the bearings to the masonry plate.

Installation – Elastomeric Laminated Bearings with Ptfе -Teflon Top and Stainless Steel sliding plates.

1. The PTFE (TEFLON) bearing is supplied as a unit including following components, Cling wrapped.

1. Top SS 316 L sliding plate
2. Center core of laminated/ plain elastomeric bearing with ptfе top.

2. Corbel / pile cap preparation

Corbel/ Pile cap top has to be structurally sound, clean, free from dust, oil, grease, curing compounds and other loose debris, and perfectly leveled with a mortar bed (cement mortar of high compressive strength) with surface fairly rough. The concrete bearing surface has to be wood float finished to a level which shall not vary more than 3 mm from a 3M long straightedge placed in any direction across the area.

All freestanding water (if any) must be removed. Mark size of laminated bearing on proper location. Utmost care should be taken in marking, considering movements specified.

3. No bearing shall be placed until the Engineer has inspected and approved seat conditions.

4. Adhesive selection and application

Apply specified / approved 2-system epoxy adhesive (hardener and resin) on marked area on Pile Cap/ Corbel top and allow to settle, depending on the product (please refer to epoxy supplier for settling time, curing time etc)

5. Minimum property of epoxy resin should be as following.

Properties	Minimum required
Compressive strength	80 N/mm
Tensile strength	15 N/mm
Elongation	5%
Bond Strength	≥ Concrete tensile strength (3 N/mm Typical)

6. Installation of bearing.

Cut and remove the marked portion of cling wrap from the top and bottom of the teflon bearing system. Utmost care should be taken to see that Stainless Steel top plate and PTFE sliding surface is not be scratched or come into contact with soil, dust, water, or grease or any kind of contaminations which can damage both surfaces.

Place bearing on top of applied epoxy resin. Care should be taken, that, the bearing is placed according to movements specified.

Utmost care should be taken to see that SS top plate is placed perfectly square on top of bearing and does not get displaced during concreting.

Would you require any other information, please contact us email pretread@eim.ae

Installation – Laminated Elastomeric Bearings.

1. Laminated Elastomeric bearing is supplied as a single unit consisting of Elastomer Layers segregated with Mild Steel Shims and bonded under heat, vulcanized to form a single unit.

2. Corbel / pile cap preparation

Corbel/ Pile cap top has to be structurally sound, clean, free from dust, oil, grease, curing compounds and other loose debris, and perfectly leveled with a mortar bed (cement mortar of high compressive strength) with surface fairly rough. The concrete bearing surface has to be wood float finished to a level which shall not vary more than 3 mm from a 3M long straightedge placed in any direction across the area.

All freestanding water (if any) must be removed. Mark size of laminated bearing on proper location. Utmost care should be taken in marking, considering movements specified.

3. Adhesive selection and application

Apply specified / approved 2-system epoxy adhesive (hardener and resin) on marked area on Pile Cap/ Corbel top and allow to settle, depending on the product (please refer to epoxy supplier for settling time, curing time etc)

4. Minimum property of epoxy resin should be as following.

Properties	Minimum required
Compressive strength	80 N/mm
Tensile strength	15 N/mm
Elongation	5%
Bond Strength	≥ Concrete tensile strength (3 N/mm Typical)

5. No bearing shall be placed until the Engineer has inspected and approved seat conditions.

6. Installation of bearing.

Cut open and remove Laminated Elastomeric Bearings from packing and clean any dirt if found on it.

Place bearing on top of applied epoxy resin. Care should be taken, to see that, the bearing is placed according to movements specified in main drawings.

Place any heavy object on top of bearing to give a 1.5 M/mm² load and leave it there until the epoxy is bonded and settled.

Clean the top of laminated bearing.

Apply specified / approved 2-system epoxy adhesive (hardener and resin) on topside of Laminated Bearing and allow to settle, depending on the product (please refer to epoxy supplier for settling time, curing time etc).

6.1. Bearings with Pre- cast beams on top

Inspect and make sure that contact area of pre-cast beam to be placed on top of bearing is clean / flat and structurally sound, free from dust, oil, grease, curing compounds and other loose debris.

Lower pre-cast beam straight and direct on Elastomeric bearing, and at most care should be taken to see that beam is placed with out any lateral distortion and beam should not be allowed to shear on top of Laminated Bearing.

6.2 Installation for in-situe casting.

Place bearing as explained above and it would be ideal to make a box around the bearing with polystyrene, (which can be later removed)

Cover bearing top with 500-micron polyethylene sheet (over the top of applied adhesive) and continue in-situe casting. At most care should betaken to see that the bearing is not displaced or physically damaged during casting.

Warranty on Pot bearings / Elastomeric Bearings/ Ptfе Sliding Bearings.

Please be informed that Pot bearings, Laminated Elastomeric bearings, and sliding ptfе bearings etc manufactured and supplied by ARP – UAE are based on the Technical Information on Vertical Load / horizontal movement / horizontal load, etc provided by Client / Consultant/ Bridge Designer. Any variations of the above forces, movements in excessive to a higher value can damage the bearing/ bearings permanently and such damages does not cover our warranty and we will not be responsible for any other financial loses caused by such damages. Hence at-most care should be taken at time of installation of bearings to see that installation is proper.

