

TechnoBearing™ EP

Elastomeric Bearing Pad

TECHNOPOL

مقاوم سازی تکنوپل

PRODUCT DESCRIPTION

TechnoBearing™ EP is a type of structural support used in bridges and other constructions to absorb and distribute loads, accommodate movements, and reduce vibrations. These pads are made from layers of elastomer (such as natural or synthetic rubber) that are often reinforced with steel plates. TechnoBearing™ EP is designed to support the vertical load of a structure while allowing horizontal movement and rotational flexibility, which helps to manage thermal expansion, shrinkage, and seismic activities. Elastomeric bearing pads are essential for maintaining the integrity and longevity of structures by providing a flexible and durable interface between structural elements.



Buildings
Structures



Transportation
Infrastructure



Water &
Wastewater



Oil, Gas &
Industrial



Waterfront
Structures



Industrial
Facilities

TECHNICAL DATA

feature	unit	amount
Hardness (ASTM D 2240)	-	60±5
Tensile strength (ASTM D 412)	MPa	15.5
Ultimate elongation (ASTM D 412), minimum	%	400
Heat resistance (ASTM D 573)	°C/70hrs	100
Tensile strength, maximum percent change	%	-15
Ultimate elongation, maximum percent change	%	-40
Low Temperature Test (ASTM D 746, Brittleness at -48°C)	-	No Failure
Laminated Pad Adhesion Test (ASTM D 429)	MPa	0.276 MPa

ADVANTAGES

- Cost Effective
- Energy Efficient
- Effective Performance
- Durable and Superb Quality
- High Flexibility
- High Absorption of Vibration Against Possible Shocks
- Ability to Rotate and Deform around Different Axes
- Resistance to Acids and Petroleum

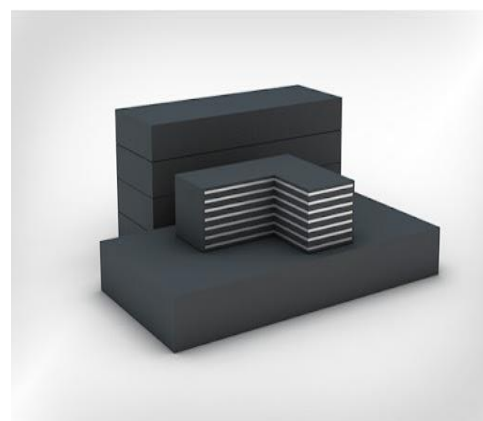
TYPICAL USES

- Construction of New Bridge
- Rehabilitation of Existing structures
- Buildings and Arenas
- Shear-key Bumpers
- Seismic Isolation Protection
- Vibration Devices for Machinery

INSTALLATION PROCEDURE

RUBBER COMPOSITION:

Reinforced elastomeric bearings feature layers of rubber bonded to steel plates through vulcanization and molding, ensuring a unified structure. This design mitigates excessive expansions and enhances strength in multiple directions, including transversal, longitudinal, compressive, and rotational capabilities. Selection of these bearings for bridge applications considers factors like strength, stiffness, cost, ease of installation, and maintenance. Rubber composition includes natural (NR) or synthetic materials like chloroprene (CR). According to EN 1337-3 standards, sheet thickness ranges from 5 mm to 25 mm. Different models of elastomeric bearing pads used in construction include plain elastomeric pads, which consist of layers of rubber reinforced with steel plates for load distribution and flexibility.



Pot bearings feature a steel pot enclosing the elastomer, allowing vertical load support and horizontal movement. Disc bearings use stacked elastomeric discs between steel plates to provide flexibility and distribute loads. Spherical bearings utilize a curved steel surface with elastomer to enable multidirectional movement and support heavy loads. Teflon sliding bearings incorporate low-friction material like Teflon for smooth horizontal movement under vertical loads. Each model is designed to meet specific structural needs, offering solutions for accommodating movement, supporting loads, and enhancing durability in various construction applications.

PREPARATION OF SUBSTRATE

Ensure surfaces are flat and free from cavities or protrusions for optimal installation and longevity. The structure surfaces should have a rough texture and be free of lubrication, oil, and hydrocarbons. Professional installation is recommended for best results. Afzir technicians are available to provide advice and supervision on every project.

CUTTING

TechnoBearing™EP elastomeric bearing pads can be manufactured in various types and dimensions according to existing standards and customer specifications.

HOW TO USE

To use a TechnoBearing™EP elastomeric bearing pad, ensure it is placed between structural elements such as bridge piers and girders. The pad should be positioned to support vertical loads while allowing horizontal movement and rotation. Proper alignment and installation are crucial to its performance; ensure surfaces are clean and level before placement. Regular inspection for wear and tear is recommended to maintain functionality and safety.

Maintain stability and safety of all bridge members before and during installation. An engineer must supervise the bearing installation to avoid damage to the bridge members, bearings, or other structural elements. Ensure final adjustments for position and level as shown in the design documentation. Store bearings to protect them from direct sunlight, dirt, dust, wind, rain, and other damaging effects. Do not dismantle pre-assembled bearings without the principal's approval, and if approved, do so under the bearing manufacturer's supervision.

For TechnoBearing™EP neoprene installation, drill the support bases, fill with grout, and position using a crane. Proper alignment is crucial. For decks with a transverse slope, fill the gap between the deck and support with high-strength mortar, known as "massage" in workshop terms. Based on environmental conditions and specifications, these

parts need periodic replacement. To replace, place jacks next to the neoprene pieces, lift the deck to relieve the load, and replace the old part with a new one.

LIMITATIONS

- It may be harmful with skin contact
- Do not apply in freezing conditions or during precipitation
- Protect applied materials from rain, freezing, foot traffic and continuous high humidity until completely dry
- Do not use when air and surface temperatures are below +5°C and above +35°C
- Avoid heavy traffic for 24 hours

CAUTION

The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) for detailed information.

FAIRST AID

SKIN

Wash off with soap and water. Cool skin rapidly with cold water after contact with hot polymer. Do not peel polymer from the skin. Consult a physician if necessary.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Ensure all personnel involved in handling neoprene wear appropriate PPE such as gloves, safety glasses, and protective clothing to prevent skin contact and eye injuries.

FIRE SAFETY

Neoprene is flammable and should be stored, handled, and used away from open flames or sources of ignition to reduce the risk of fire hazards.