

WABO[®] FINGER JOINT

Smooth riding expansion joint system

DESCRIPTION

WABO FINGER JOINT is designed for use in heavy traffic bridge structures. This system allows the bridge deck to move while maintaining a smooth and low noise-riding surface. The **WABO FINGER JOINT** is engineered to last longer than the bridge deck and can be used for new bridges or as a replacement joint alike. The system is easy and fast to install, using anchor bolts in one single operation.

The finger plates are cantilevered and are anchored on each side of the structural gap. The main movement of the Finger Joint is along the axis of the fingers themselves. The fingers are sinusoidal in shape to allow the movement to take place, without posing any traffic hazard in the form of sharp tooth.



ADVANTAGES

- Durable

WABO FINGER JOINT is engineered to last longer than the bridge deck they protect. This is achieved by using high-grade material in a simple yet robust design. The design is aimed at minimizing bolt shear offs using tension bolts, which is the most common type of failure for finger joints. High strength structural grade steel increases the life of finger plates under fatigue load due to traffic.

- Corrosion Protection

Long term corrosion protection of steel is ensured by providing minimum 100-micron thick Hot Dip Zinc Galvanizing. Based on special project needs.

- Waterproofness

The Reinforced EPDM membrane with gutter type connection allows run off water to drain through the bridge drainage outlet.

- Finger Profile

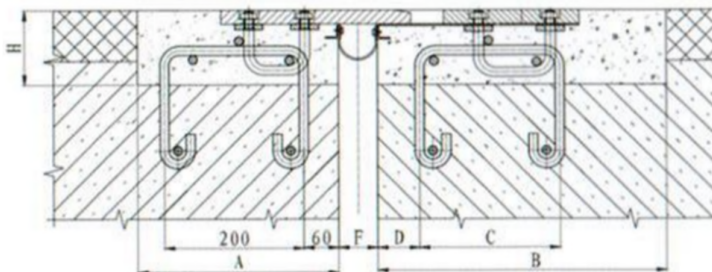
The finger profile is sinusoidal which reduces the traffic hazard in case of differential settlement of decks. This particular profile is also non-hazardous for bicycle and motorbike wheels.

RECOMMENDED FOR

- Sealing of joints on bridges and highways movement up to 480.
- Skewed joints.
- High impact and repetitive loading conditions.
- New construction or repair and maintenance of existing joints.

MOVEMENT TABLE

Model Number	Total Movement (mm)	"F" Gap (mm)		Gap Width @ Mid Temp. (mm)
		Min.	Max.	
F-80	80	40	120	60
F-100	100	40	140	100
F-120	120	40	160	100
F-160	160	40	200	120
F-200	200	40	240	140
F-240	240	40	280	160
F-320	320	40	360	200
F-400	400	40	440	240
F-480	480	40	520	280
F-560	560	40	600	320
F-640	640	40	680	360
F-720	720	40	760	400
F-800	800	40	840	440



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INSTALLATION SUMMARY

- Reserve a roughened reset block-out as shown in drawing on both sides of deck.
- Plug the structural gap with wooden boards and fill the block-out with gravel. It is recommended that Asphalt be laid prior to installing Finger Joint to achieve smooth level.
- Lay Asphalt continuously over the structure including the movement joint area. Saw cut the surface at the edge of block out as shown on proposal drawing.
- Remove top layer of Asphalt over the joint block-out area and clean block-out thoroughly using pneumatic blower or pressurized water.
- Set alignment and level of angle bar into position as shown on drawing. The level of angle bar must be reserved the thickness of finger plate. Fix the angle bar to the structural rebar by welding with short piece rebar.
- Make formwork by welding 2 mm thick steel sheet at the bottom of angle bar. This formwork requires no removal after installation.
- Fix rubber sheet to the angle using strip plate and tighten the stainless-steel nuts provided with the supply. Bolts are welded at the back of the angle.
- Place finger plate on top of angle bar and set the "F" gap. Tack weld the finger plates to avoid plate from moving when pouring concrete.
- Assemble the anchor bolt to the finger plate. The bolt position should be at full length of the threaded shank.
- Cast concrete in the block out ensuring anchor bolts remain vertical. Finish concrete at block out surface / finger plate with corner angled trowel.
- Tighten each anchor bolt using torque wrench at least 72 hours after concreting.
- Clean the joint from top, fill elastomeric sealant into the bolt hole cavity.

ADDITIONAL REQUIREMENTS/EQUIPMENT

- Torque Wrench for tightening anchor rods.
- Formwork, anti-rust coated steel sheet.
- Straight Aluminum beam for levelling Finger plates with road surface.



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PROPERTIES

FINGER PLATES:

Finger Plate steel is of High Strength Q345 Grade Steel, ASTM A588 weathering grade steel, or Stainless Steel are also provided on special requests.

REINFORCED EPDM SHEETS:

The reinforced EPDM sheet is produced from high quality grade rubber which can resist high temperature, UV radiation, Ozone, Chemicals and Abrasion from contaminant. The EPDM sheet is reinforced with high tensile polymer for longer durability.

LIMITATIONS / STORAGE

Wabo does NOT recommend using **WABO FINGER JOINT** under the condition where the joint will experience significant vertical or transverse movements.

- Store **WABO FINGER JOINT** components in an area that will not damage the materials.
- Store fabricated Finger Plate along with Angle Bar to be used at the same location.

PACKAGING / COVERAGE

- Finger Plates are manufactured and supplied in standard panel length of 1 meter, the upturn panels are fabricated and supplied in maximum 1 meter panel. Both standard and upturn panels are packed on the same joint pallet.
- Reinforced EPDM Sheets are supplied with hole and supplied in continuous lengths and coiled on a pallet for shipping.
- Angle Bars are fabricated and supplied with Strip Bar in full length of joint.
- Anchor Rods are assembled with Nut, PVC, Anchor Disk and supplied in timber box.

HEALTH AND SAFETY

Users are advised to wear gloves and eye protection when handling, mixing and applying **WABO FINGER JOINT**.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

MBS_CC-UAE/Wabo_Finger_Joint

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