BUILDING TRUST

PRODUCT DATA SHEET

Wabo® Modular

Large movement expansion joint systems

DESCRIPTION

Wabo® Modular Expansion Joint is designed for large movement and use in heavy trafficked bridge structures requiring movements in excess of 100 mm. This joint system allows the bridge deck to move while maintaining a smooth watertight riding surface.

USES

- Sealing of joints on bridges with movements greater than 100 mm.
- Rehabilitation or new construction.
- High impact and repetitive loading conditions.

FEATURES

Versatility
Wabo® Modular joint systems is able to provide a smooth riding surface while absorbing the impact of heavy traffic. Each modular joint is engineered and manufactured to meet a variety of conditions and requirements.

Watertight
Wabo® Modular joint systems reliably seal the joint gap, keeping runoff water from passing through to the substructure. The continuous elastomeric sealing element offers twice the leak proofing protection by being bonded to the steel members and then mechanically locked in place.

Durable
Wabo® Modular joint systems are engineered to last longer than the bridge decks they protect. Each separation beam is connected to support bar ensuring rigidity in resisting horizontal forces from traffic and, at the same time, providing free movement in the direction of expansion and contraction of the structure.

Solutions to Challenging Applications
- Modifying systems for curved structures and other conditions where the direction of thermal movement is not parallel to the bridge centerline.
- Engineering an angle or curve in a modular joint system anywhere along its length in the deck.
- Fabricating formwork into the system for ease of installation in the field (optional).
- A variety of curb treatments.

PRODUCT INFORMATION

Composition	Neoprene rubber (Polychloroprene) or EPDM (Ethylene Propylene Diene Monomer) Steel (ASTM A588 weathering grade steel or Q345 High Strength Structural Steel)
Packaging	Wabo® Modular expansion joint system are manufactured and supplied typically in full length in maximum 11 meters length but if longer than 11 meters it will be properly spliced for transportation. Wabo® Modular elastomeric seals are supplied in continuous lengths and coiled on a pallet for shipping.

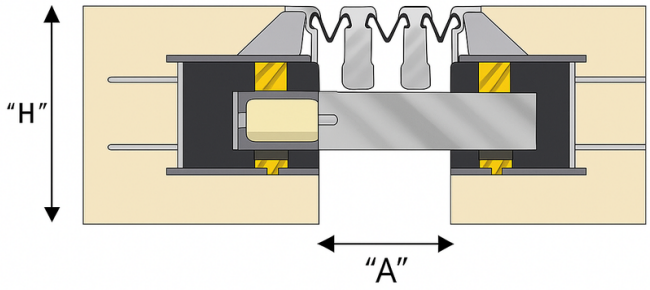
Shelf life

Neoprene rubber (polychloroprene) and EPDM (Ethylene Propylene Diene Monomer): 24 months if stored in a cool, dry environment, protected from direct sunlight, UV radiation, ozone, and excessive humidity.
Steel (ASTM A588 Weathering Grade or Q345 High Strength Structural Steel): No defined shelf life when stored under suitable dry conditions and protected from corrosion and environmental deterioration.

Storage conditions

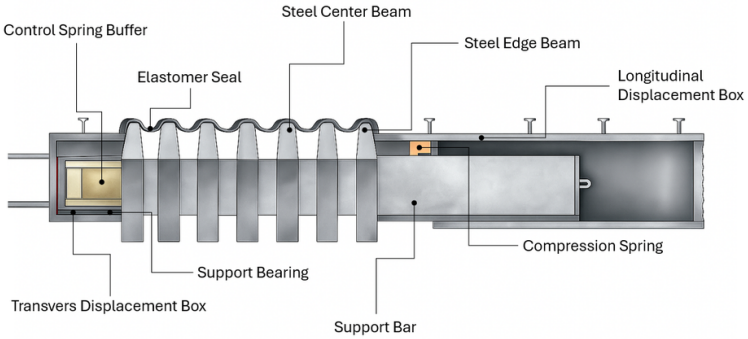
Store in a dry, clean and well-ventilated area, protected from prolonged exposure to moisture, condensation, aggressive chemicals and corrosive environments. Materials should be stored off the ground and protected against contamination and mechanical damage.

Dimensions



Model Number	Total Movement	Dimension "A" Min. mm	Dimension "A" Max. mm	Dimension "H" mm
SDM-160	160	110	270	400
SB-240	240	190	430	410
SB-320	320	270	590	410
SB-400	400	350	750	420
SB-480	480	422	902	430
SB-560	560	510	1070	440
SB-640	640	590	1230	450
SB-720	720	670	1390	460
SB-800	800	750	1550	470

Cross section



TECHNICAL INFORMATION

Shore A hardness	~60			(ASTM D2240)
Tensile strength	~2000 psi			(ASTM D412)
Elastic recovery	~65 %			(ASTM D395 – Method B)
Retention of properties after heat ageing	Tensile strenght Approx. -20 %	Elongation Approx. -20 %	Shore A hardness Approx. -10 %	(ASTM D573)
Swelling	~45 % Oil Swell (Weight change)			(ASTM D471)
Elongation at break	≥ 250 %			(ASTM D412)
Resistance to ozone	No cracks (70^{h} at 40 °C), 20 % strain, 300 pphm in air			(ASTM D1149, Modified)

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTATION

General Method Statement (GMS) - Installation Guidelines

IMPORTANT CONSIDERATIONS

Resilient Support Bearings:

- The resilient support bearing of the Wabo® Modular allows the joint system to accommodate thermal movement as well as rotation and deflection of the bridge.
- Support bars in the Wabo® Modular joint system ride between specially engineered resilient bearings and springs, which act to dampen the dynamic loading. The bearings support the bar while the springs above the bars prevent looseness, rattling, and uplifting.

Control Spring Buffers:

- The Wabo® Modular Joint Control Spring is an Equidistance Control System which prevents each seal from expanding beyond its intended movement range while maintaining equal spacing between separation beams at all stages of movement.
- Polyurethane control buffers are mounted on nylon dowels between steel flanges on adjacent support bars.
- Polyurethane is ideally suited for large deformation movement.
- It has high longitudinal strain capacity with low lateral strain, sound attenuating properties and excellent vibration dampening and impact absorption. Control springs develop their maximum compressive force when the joint is open and become fully relaxed when the joint is closed to its minimum while maintaining equal seal spacing.

Support Bars:

- Each traffic-bearing separation beam in a Wabo® Modular joint system is connected using special sliding linkages with support bar.
- This arrangement will transmit loads to the edges of the joint and at the same time; move freely in the direction of movement of the structure.

Elastic Seal:

- The elastomeric sealing elements can handle movements up to 100 mm.
- The elastomeric seal shall meet or exceed the following properties.
- Properties of Elastomeric Seal as per ASTM D5973.

ECOLOGY, HEALTH AND SAFETY

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

APPLICATION INSTRUCTIONS

APPLICATION

- Prepare block out to proper width and depth. Place formwork using temporary lifting devices, the joint system is lifted and placed into the joint opening.
- Levelling devices are used to set joint system to grade.
- Once system is in position, adjustments for structure temperature are made with prestress devices. Lifting devices are removed prior to adjustments.
- Concrete is poured, taking care to ensure no cantilever or voids are left under the support boxes.
- Levelling attachments are ground off and shipping devices are loosened to allow structural movement.
- Open traffic after 72 hours.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

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