History and Validation of the Wabo®MDM TransFlex System

San Francisco - Oakland Bay Bridge
San Francisco, CA
Watson Bowman Acme and Caltrans worked together to custom design the seismic expansion joints to be used on the self-anchored suspension span (SAS)

Dumbarton Bridge
San Francisco, CA
Earthquake retrofit with cutting edge seismic technology including the bridge expansion joints

**Yerba Buena Island Transition Structure**
San Francisco, CA
Selected to link the world's largest self-anchored suspension span (SAS) and Yerba Buena Island

Presidio Parkway Viaduct
San Francisco, CA
Shipped fully pre-assembled to accelerate the installation process of the first Transportation P3 project in the State of California

ACCELERATED TRAFFIC LOAD TESTING
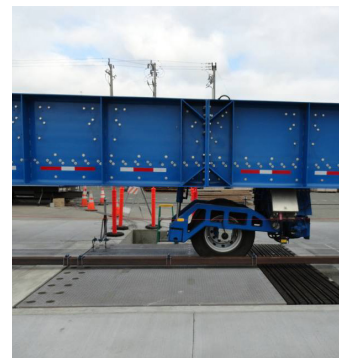
- On-site testing to ensure that the joints were robust enough for California traffic on the San Francisco Oakland Bay Bridge
- Heavy Vehicle Simulator (HVS) used to test load-bearing and wear capabilities
- Total of 1.36 million load repetitions, equating to about 46 million equivalent standard axle loads, were applied in seven phases during the three-month test

Additional Segmental Joint Systems

Watson Bowman Acme is leading the bridge industry with its full line of segmental bridge expansion joint systems.
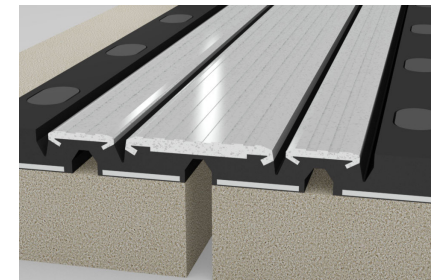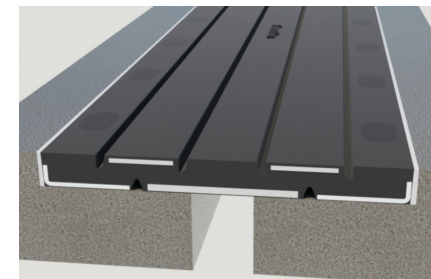

Wabo®Flex
Designed for heavy traffic loading. Accommodating movements from 2–13", this system's low profile makes it ideal for use on bridge decks and ramps.

FEATURES
- Riding surface designed with aluminum skid resistance plates
- Accommodates movements up to 13"
- Tongue and groove connection for ease of installation
- Designed to minimize debris accumulation

Wabo®TransFlex
Designed to accommodate anticipated thermal movements, all while rejecting debris, and creating a level, smooth-riding, wear-resistant surface.

FEATURES
- Minimal debris build up
- Accommodates movements up to 13"
- Steel reinforced elastomers to withstand any traffic load
- Tongue and groove connection for ease of installation
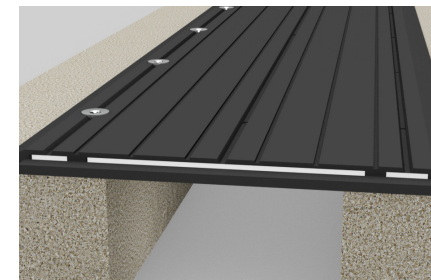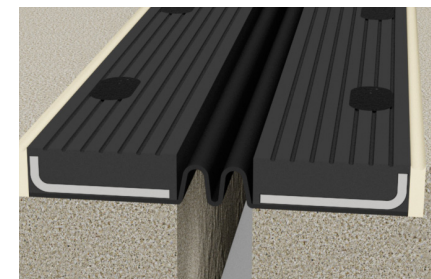

Wabo®SafetyFlex
Patented elastomeric hinged cover plate system that is ideal for pedestrian walkway areas, as well as in low-speed vehicular traffic area.

FEATURES
- ADA Compliant
- Hinged rubber cover plate accommodates vertical offset
- Quiet smooth riding surface
- Accommodates movements up to 31"

Wabo®ElastoFlex
Features a continuous fabric reinforced EPDM rubber gland, that is mechanically locked by segmental steel reinforced EPDM anchor blocks.

FEATURES
- Low profile system
- Versatile EPDM gland handles directional changes and/or skews
- Skid-resistant molded surface grooves for proper water drainage
- Accommodates movements up to 4"

For more information visit watsonbowmanacme**.com**

Wabo®MDM TransFlex
## A paradigm shift in expansion joint technology

Your Strongest Partner for Expansion Joint Systems

What is Wabo®MDM TransFlex?

Wabo®MDM TransFlex is a multi-directional movement segmental plate expansion joint assembly that shifts the moving component away from the critical expansion joint opening to the bridge deck. This shift increases the longevity of the elastomeric segmental panels.

The system is supplied in modules typically spanning half a lane, allowing a simplistic installation with minimal impact to traffic. This expansion joint system's design also allows for easy inspection, maintenance, and component replacement as necessary following damaging seismic events.
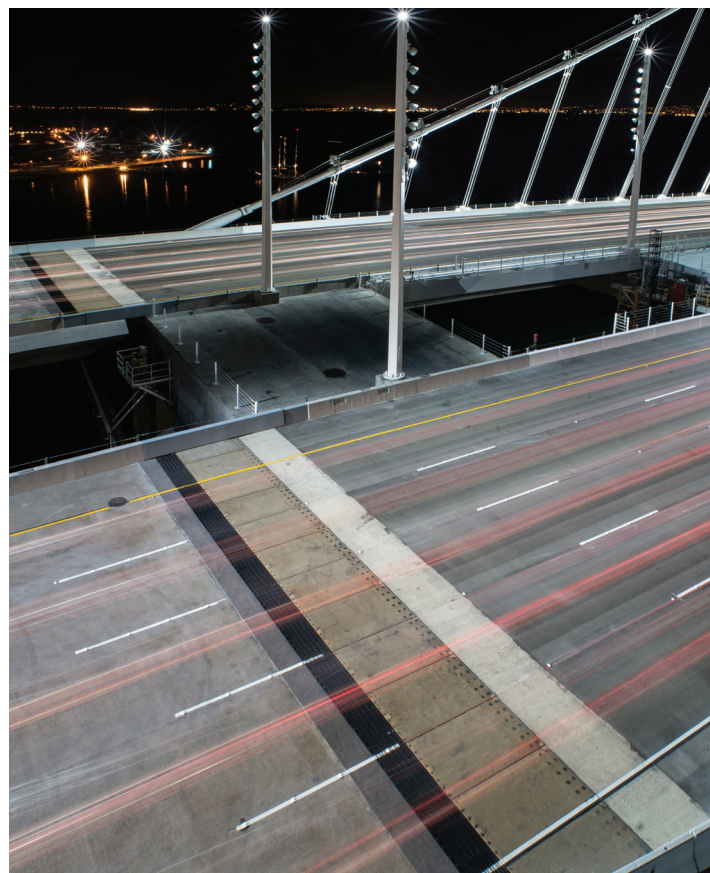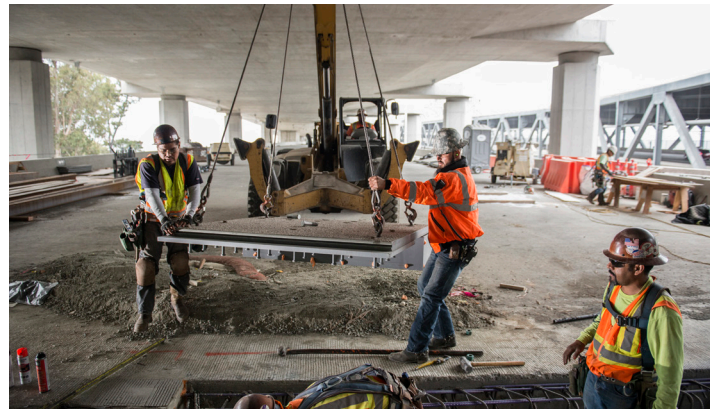
Where is Wabo®MDM TransFlex used?

- Bridge structures that have limited thermal service movements, but where structure creep and shrinkage have caused joint openings to increase beyond the limits of typical expansion joint systems

- Low height applications

- Bridge expansion joints with seismic movement criteria

- Accelerated bridge construction projects

What features and benefits set Wabo®MDM TransFlex apart?

FEATURES	BENEFITS
Unique Sliding Joint Design	• Complete structural isolation between bridge segments • Shifts service and seismic potential damage away from joint opening
Simple Design Principle of Joint Modules	• Connected, elastomeric segmental panel, deck plate, support plate and box/channel assembly • Flexibility in terms of construction, future joint widening or replacement
Multi-Directional Movement Capabilities	• Accommodates movements in longitudinal and transverse directions • Large rotations about the vertical axis and limited vertical movements about the transverse axis
Minimal Noise disturbance	• Improved ride comfort and suitable for urban areas • Pre-assembled modules minimizes potential noise, material wear and fatigue
Minimum Traffic Disruption	• Maintains full functionality and able to carry traffic safely after a seismic event • Each module covers a half traffic lane

ACCESSORIES FOR YOUR BEST APPLICATION:

- To fill bolt hole cavities and other voids in system, use Wabo®SiliconeSeal
- Use Wabo®Crete II elastomeric concrete along blockout edge of segmental panels
- For edge void and panel-to-panel connection, use MasterSeal® NP1™ Sealant

ASSEMBLY OF FOUR MAIN COMPONENTS

1. Channel / Box: Houses the precompression components for the deck plate.

2. Deck Plate: Plate functions as the riding surface over the joint opening as well as carrying the traffic loading into the adjacent substructures.

3. MDM Panel: Located on the deck and away from the joint opening, the panels expand and contract with the bridge service movements

4. Support Plate: Supportive sliding surface for the deck plate and MDM panel during thermal and/or seismic movements
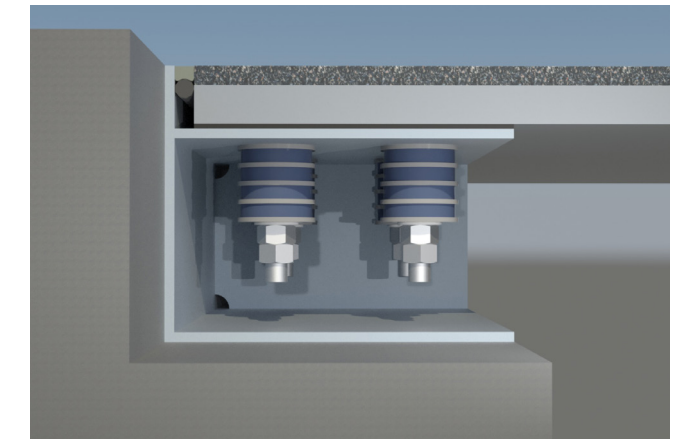
Wabo®SiliconeSeal

Wabo®Crete II
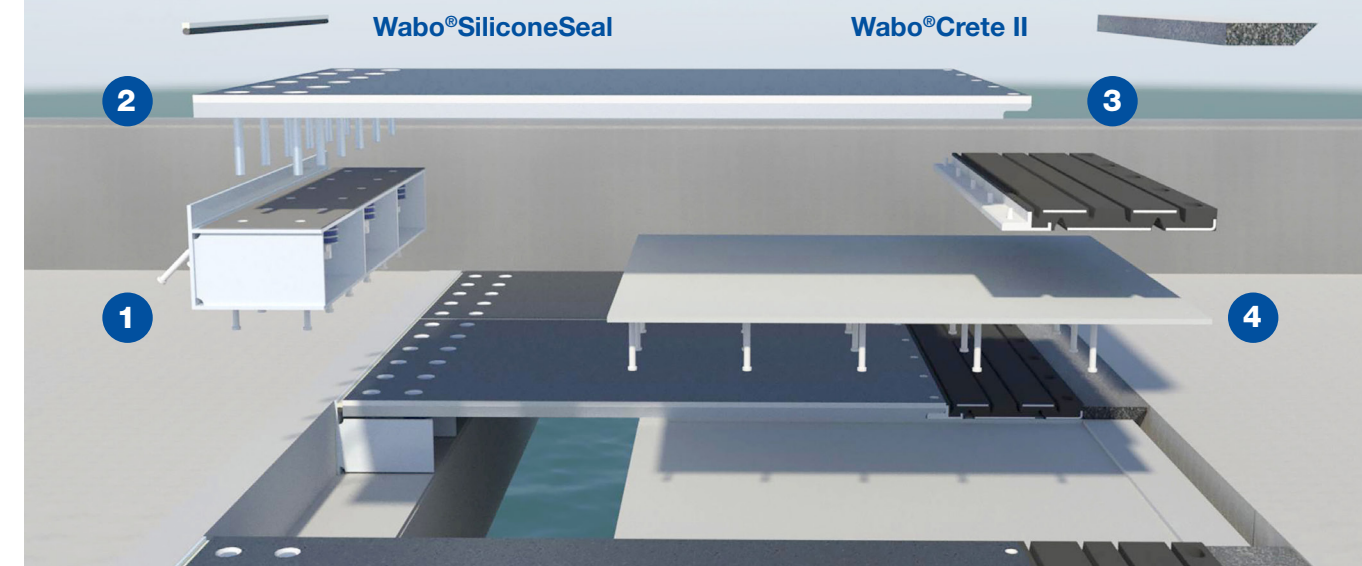
Wabo®MDM TransFlex Components & Options:
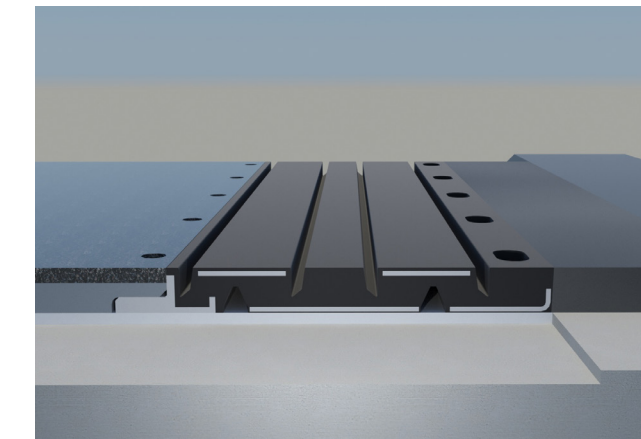## Because no two bridges are the same…
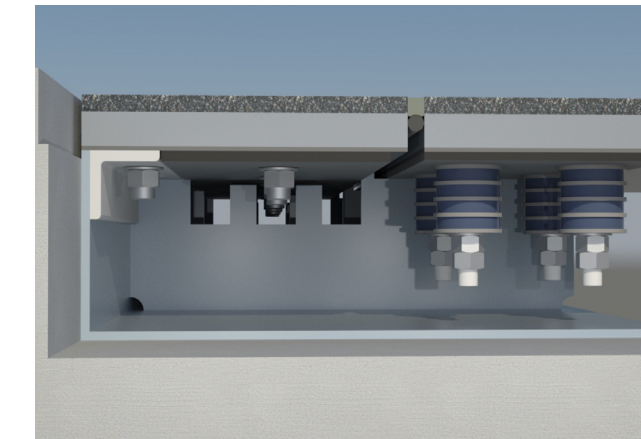
Full Channel Assembly
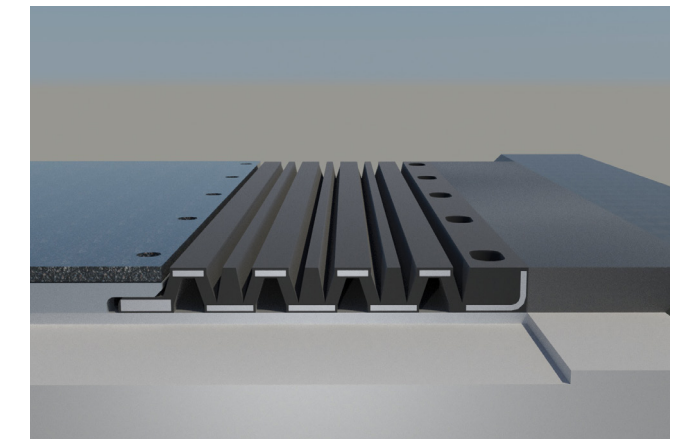Allows topside access to pre-compression components

Half Channel Assembly
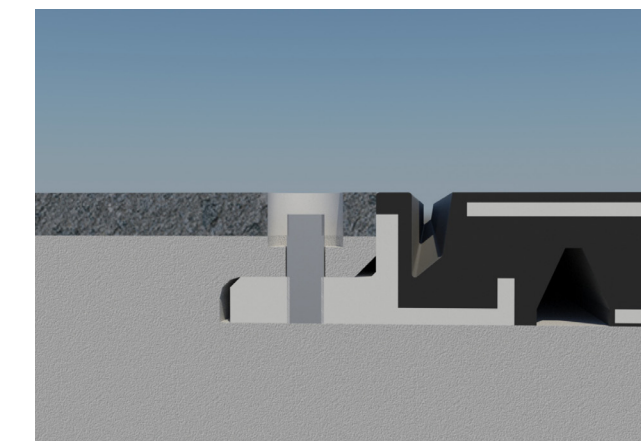Allows underside access to pre-compression components

Wabo®MDM TransFlex Segmental Panel
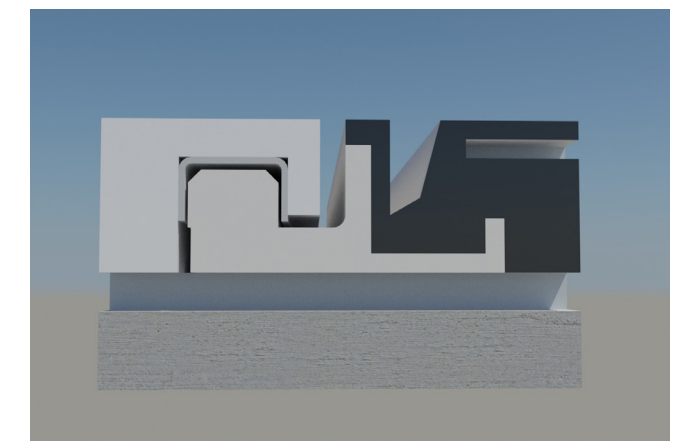Up to 9" of service movement

Wabo®MDM Trelleborg Transflex Segmental Panel
Up to 32" of service movement

Pin Connection
Standard deck plate to segmental panel connection

Sliding Connection
Patented connection for additional transverse movement