

## EXPANSION JOINT WOXD

### TWO EXTRUDED ALUMINIUM ALLOY PROFILE



**ARCHFLEX**  
ARCHITECTURE ENGINEERING Co. Ltd.

#### FEATURES

Woxd Expansion Joint is designed for quality and is much more appreciated for the benefits that it provides in many structural and construction engineering projects. It gives an excellent traffic comfort. It is basically two extruded aluminum alloy sections profile element.

#### DESIGN PATTERN

Woxd is a pair of metal element which is basically Aluminum Alloy of Grade A6061-T6. It is trapezoidal sectional in shape. The two elements are arranged face to face which are connected to the elastomeric profile seal by interlocking joint design system. Each unit size varies from 1 to 6 meter of length. The metallic elements are anchored to the structure by fasteners.

#### JOINT MOVEMENT

The joints are designed for movement up to 14 mm or 100 mm depend on elastomeric profile seal. It can accept any amount of skew without any change to their intrinsic qualities since there are no teeth / fingers.

#### NOISE FREE

There is no metal to metal contact so noise is not generated therefore it gives a comfortable ride. There is no welded fixation which is the foremost reason making it a joint free of noise pollution.

#### GOOD RESISTANCE POWER

It has a good resistance to heavy duty and frequent traffic load due to fixation by pre-stressed tension bolts. It has great adaptability to all surface structure types whether new or old structures. It has an excellent resistance against shocks and vibrations.



#### ELASTOMERIC PROFILE PREVENTS FOREIGN BODY

Elastomeric profile which is an extruded synthetic rubber seal of standard AASHTO M251 and EU 1337-3 made of EPDM / CR commonly known as NEOPRENE is inserted between the two elements. The elastomeric rubber seal is end to end continues along the joint length so it prevent any penetration of foreign bodies and provide water proofing against run-off water and also saving sub-structures like Bearing devices and concrete underneath the joint. This section is installed below the surface layer and doesn't resist traffic load. It is removable as well after unlocking it from the interlocking joint system as required for maintenance.

#### GALVANISED ANCHOR BOLT AND WASHER

The Anchor Bolt of quality class 10.9 standards is connecting the element to the structure and the washer under the bolt heads is also made of galvanized steel so protective against corrosion.

#### POLYVINYL CHLORIDE (PVC) SHEATH:

A protective sheath made up of Polyvinyl Chloride (PVC) is used for protecting the anchor bolt at the time of fresh concrete pouring for easy movability and tightening of bolts with torque wrench for tying in the cast iron socket /anchoring pieces after concrete is cured and settled.

#### VERTICAL AND SEISMIC MOVEMENT:

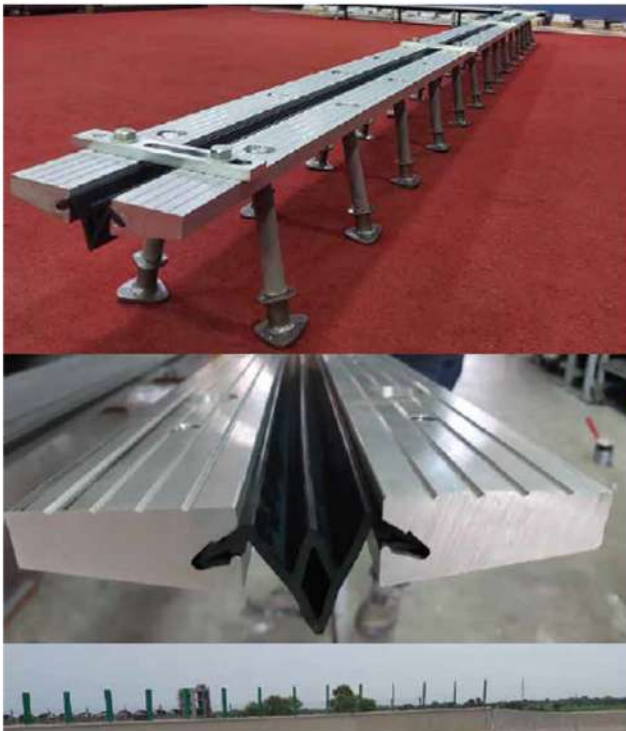
Vertical movement of structure is possible for jacking purpose without the need to disassemble the joint for maintenance purpose which saves time and money. It is suitable for transverse behavior and earth quake resistance proving it a best choice for seismic movement.

#### DURABLE FIXATION

The metallic element is strongly fixed to the structure by means of 4 pre-stressed tension bolts on each side per meter so the post tensioning provides a permanent compressional stress between the joint and structure which refrain jerking. Woxd can be removed easily since the anchor tension bolts are accessible due to the method of fastening the elastomeric section.

#### CONCRETE CASTING PRECUATIONS

The casting concrete should be of 6000 psi while the crush used in it should be of 12mm for the best technical installing of joint and cavity free concrete The Expansion Assembly is to be set for 1.6" (40mm) at 20 C Ambient Temperature. at other ambient temperatures, The Contractor Shall submit to the engineer the proposed setting gap for his approval.





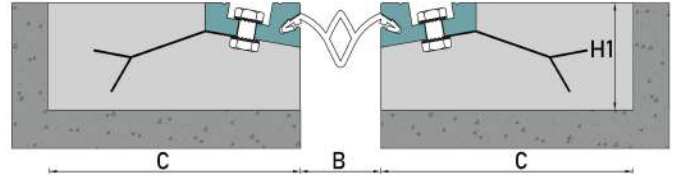
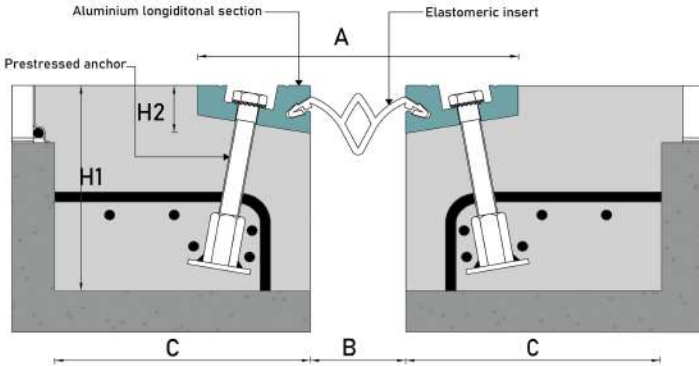
# EXPANSION JOINT WOXD

## TWO EXTURED ALUMINIUM ALLOY PROFILE



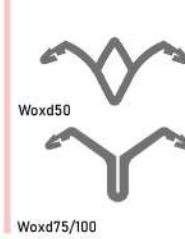
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### TECHNICAL DATA SHEET



Type	A		B		C	H1	H2
	min	max	min	max			
Woxd50	146	196	14	65	150	200	28.5
Woxd75	150	225	10	87	150	200	30
Woxd100	150	250	10	112	150	200	30

Elastomeric Section Models



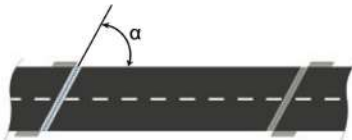
Type	B		C	H1
	min	max		
Woxd50	15	65	200	70
Woxd75	12	92	200	70
Woxd100	12	112	200	70

### MOVEMENT RANGE

The table opposite shows the capacity of Woxd joints to accept movement depending on skew angle ( $\alpha$ ) of the main structure.

Type	Straight (100gr)	80 gr	60 gr	40 gr
Woxd50	50	52.5	62	85
Woxd75	75	79	92	127
Woxd100	100	105	123	170

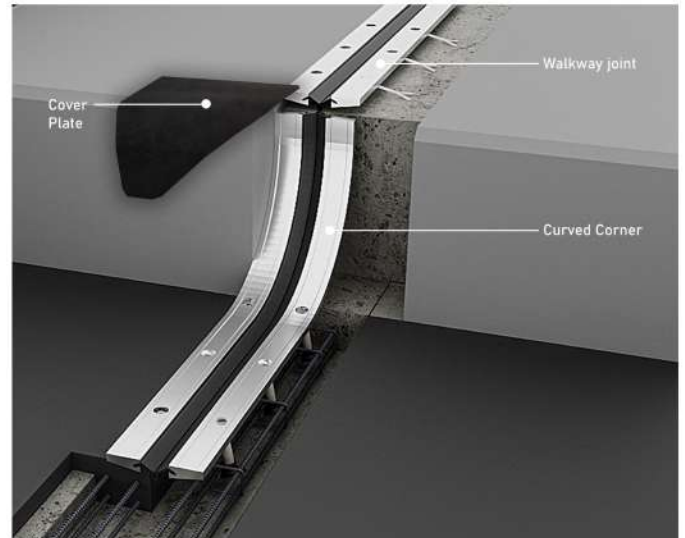
Dimension in mm



### ACCESSORIES

To ensure general watertightness at expansion joint level and joint continuity to pavements (or nontraffic areas), the following accessories are available:

- Walkway joints
- Curved corner + cover plate;





**PHYSICAL PROPERTIES OF ALUMINIUM ALLOY GRADE A6061-T6**

Alloy& Temper	Specified Thickness mm		Tensile Strenght Rm Mpa		Yield Strenght Rp0.2 Mpa		Elongation min %		Bend radiusa		Hardness HBWa
6061--T6	Over	Up to	Min.	Max.	Min.	Max.	A <sub>50 mm</sub>	A	180°	180°	
	≥ 0.4	1.5	290	0	240		6			2.5 t <sup>b</sup>	88
	1.5	3.0	290	0	240		7			3.5 t <sup>b</sup>	88
	3.0	6.0	290	0	240		10			4.0 t <sup>b</sup>	88
	6.0	12.5	290	0	240		9			5.0 t <sup>b</sup>	88
	12.5	40.0	290	0	240			8			88
	40.0	80.0	290	0	240			6			88
	80.0	100.0	290	0	240			5			88
	100.0	150.0	275	0	240			5			84
	150.0	250.0	265	0	230			4			81
	250.0	350.0	260	0	220			4			80
	350.0	400.0	260	0	220			2			80

**PHYSICAL PROPERTIES OF ELASTOMER**

Hardness, Durometer Ai ASTM D 2240.v	45 ± 5 points
Tensile Strenght, ASTM D 412 min.	127 Kgs/square centimeter
Elongation at Break	400 percent min.
Compression Set, 22 Hours at 70 degree C. ASTM D 395, Method B.	20 percent max.
Low Temperature, ASTM D 746	Not brittle at 40 degree C.
Ozone Resistance, Exposure to 100 PPHM Ozone for 70 hours at 38 degree C. Sample under 20 percent. ASTM D 1149.	No cracks
Oil Deterioration - Volume increase after soaking in ASTM oil No 3 for 70 hours at 100 degree C. ASTM D 470	120 percent max.