

Federal Department of the Environment, Transport, Energy and Communications (DETEC)

Federal Roads Office (FEDRO) Road Infrastructure East Department

Fact sheet

Date

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ASTRA Bridge: brief overview

1. Technical data

The ASTRA Bridge is a mobile construction site bridge that is suitable for use during roadworks. Traffic can be re-routed over it while roadworks are carried out underneath.

- Length: 257 metres
- Width: 7.57 metres
- Height: 4.65 metres
- Overall gradient of the entrance and exit ramps: 1.25% 6.1%
- Gradient of the road-ramp/ramp-road transition: 1.25%
- Indicated speed limit: 60 km/h



2. Use on roadworks sites

The ASTRA Bridge is equipped with a drive unit which can be hydraulically raised by 10 centimetres and moved vertically and horizontally. This allows roadworks to be carried out underneath it over a length of 100 metres and with a clearance gauge measuring 5.10 metres wide and 3.10 metres high. Once work under the bridge has been completed, it is moved 100 metres to the next section of roadworks by remote control.



As there is not enough room beneath the ASTRA Bridge for HGVs with a permitted height of four metres, they have to use the logistics lane, which runs parallel to the auxiliary bridge. If the roadworks site is located on the normal traffic lane, the logistics lane must be set up on the overtaking lane. If the site is located on the overtaking lane, the logistics lane must be set up on the hard shoulder.

Considering the usual roadworks warning signalisation, this results in a site length of approximately 1,500 metres, at the end of which motorists can drive freely once again.

3. Bridge assembly

In order to assemble and dismantle the bridge, the carriageway needs to be closed or a single lane of oncoming traffic needs to be set up on the opposite carriageway. The timeframe for this work is extremely tight on major routes (particularly the A1 and A2), as the bridge can only be assembled and dismantled between 8 p.m. and 10 a.m. on weekends. To assemble the ASTRA Bridge, 16 lorries with low-bed trailers have to make a total of 45 trips to transport the eight ramp sections, 18 gantries and 19 intermediate elements. The critical moment during assembly and dismantling is the use of three cranes. In total, one 110-tonne mobile crane (for four ramp sections) and two 55-tonne cranes are needed. Two mobile mounting frames are also used for bolting gantries and intermediate elements, and two 14-person assembly teams are required.

4. Potential uses

- Where lane closures usually lead to congestion
- Bridge repairs
- Replacement of road surfaces
- Replacement of road expansion joints

5. ASTRA Bridge benefits

- Short roadworks site length
- Traffic does not have to be directed onto the opposite lane due to roadworks
- Fewer traffic restrictions since the opposite lane is not affected
- No lane closures on the unaffected opposite lane, so no narrowing and consequently reduced congestion
- Better traffic flow as there is no need to reduce the central reservation
- Improved safety by separating roadworks and traffic
- Work does not have to be carried out at night
 - Less noise for residents
 - More socially acceptable for roadwork staff
 - Cheaper as no need to pay night-shift surcharges
- More shelter from rain and sun for construction workers
- Fewer interruptions due to bad weather

6. Motorist behaviour

The ASTRA Bridge can safely be used with two lanes at a speed limit of 60 km/h, even with a very low ground clearance. As with the other roadworks on the motorway network, motorists are requested to exercise particular caution and, where possible, to drive in staggered formation.

Contact/questions:

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