

TEMPORARY
PERMANENT
BRIDGING



—WAAGNER-BIRO RAPID-BUILD
MODULAR BRIDGES—

—MODULAR BRIDGE OVERVIEW



Type: Panel bridge

Connection: Panels are pinned.

Decks are bolted. No welding required.

Typical span: Up to 79.248 m / 260 ft.

Modular length: 3.048m

Single lane: 3.15m, 4.20m

Double lane: 5.25m, 7.35m

External footpath:

1.00m, 1.50m, 2.00m

Deployment: Launching, crane in

Applications: Rural, remote, emergency, military, floating, heavy duty, pedestrian, pipeline, ferry, bulk loading

Page
6



Type: Truss-type modular bridge

Connection: High strength friction grip (HSFG) bolts. No site welding required.

Typical span: Up to 121.5 m

Modular length: 4.50m, 5.00m, 6.00m

Single lane: 3.50m, 4.20m

Double lane: 7.35m

External footpath: 1.00m, 1.50m

Bridge deck: Concrete, steel, wood

Deployment: Launching, crane in, scaffolding

Applications: Rural, remote, emergency, heavy duty, main highway, high traffic routes, permanent and semi-permanent, pipelines

Page
10



Type: Beam bridge Goliath WBG

Connection: HSFG bolts. No welding.

Typical span: Up to 40.0 m

Modular length: 7.5m, 10.5m, 13.5m ...

Single lane: 2.5m

Double lane: 5.0m, 7.5m, 10.0m

External footpath: 1.00m, 1.50m

Bridge deck: Steel, epoxy-coated

Deployment: Crane in, launching

Applications: Rural, remote, emergency, heavy duty, main highway, high traffic routes, permanent and semi-permanent

Page
12



Type: Beam bridge Hercules WBH

Connection: HSFG bolts. No welding.

Typical span: Up to 21.0 m

Modular length: 7.5m, 10.5m, 13.5m ...

Single lane: 2.5m

Double lane: 5.0m, 7.5m, 10.0m

External footpath: 1.00m, 1.50m

Bridge deck: Steel, epoxy-coated

Deployment: Crane in, launching

Applications: Rural, remote, emergency, heavy duty, main highway, high traffic routes, permanent and semi-permanent

Page
14

—KEY BENEFITS OF WAAGNER-BIRO MODULAR BRIDGES

Modular increments
Long-span capability
Multi-span capability
Interchangeable parts
Standardised components
Single and double lane
Single and double storey
Three types of reinforcing chords

Easy adaptation to
different spans, widths
and traffic loads

Easy handling of components
Low unit weights of components
Bolted and pinned connections
No welding on site
Small erection team sizes
No specific skills required
Full technical assistance
by Waagner-Biro

Quick response and
fast delivery
Rapid installation

Hot-dip galvanised or
multi-layered coatings
Improved welding details
High-load capacity through
the use of high-strength steel

Long lifetime and easy
maintenance

Available with walkways,
ramps, heavy-duty decks,
anti-skid surface,
assembly equipment

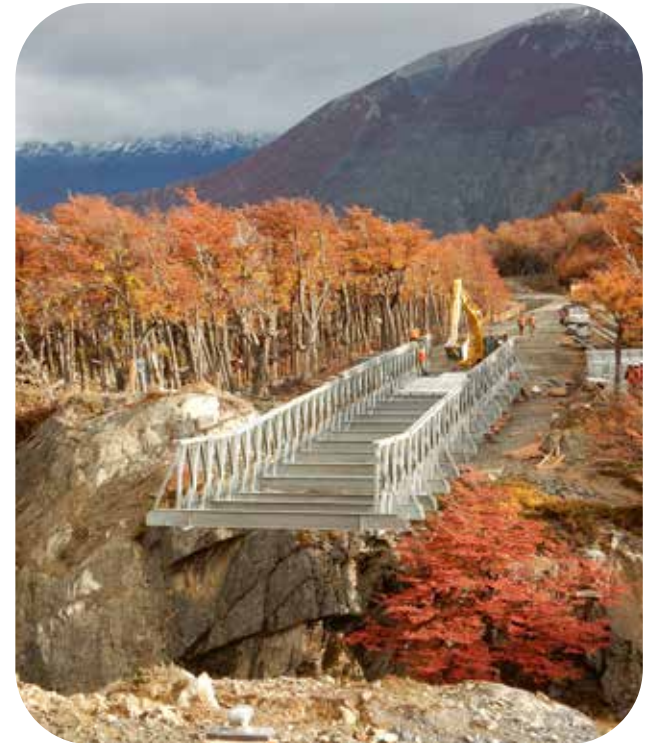
Better user experience
and high safety standards

No need for heavy machinery
and equipment
Reduced civil works cost
Optimised static design

Small budget
Economic solution

Interchangeable components
Modern and robust materials
Easy to handle on site
Quick to build
Heavy duty steel deck elements
Bridge parts on stock for
fast delivery
Worldwide transport in
standardised shipping
line containers

Easy deployment



—PANEL BRIDGE

Waagner-Biro Bridge Systems is one of the world's top suppliers of panel bridges.

The Waagner-Biro panel bridge is a robust modular bridge system made up of interchangeable standard panels that pin together in different configurations to form the required trusses for spanning gaps and valleys. Supplied direct from stock, Waagner-Biro panel bridges are available with heavy-duty decks, anti-skid surfacing, kerbs, parapets, walkways, steel ramps, launching noses and towers using the same parts as the bridge itself.

Key benefits

- Spans in increments of 3.048m
- Clear spans of up to 80m
- Single (3.15m, 4.20m) and double lane carriageway (5.25m, 7.35m)
- Bolted and pinned connections
- Fully interchangeable components
- Multi-span capability with steel towers
- Hot-dip galvanised parts
- High-load capacity and improved welding details
- Simple to build: Easy threading of the transom
- Rapid installation
- No need for heavy machinery on site
- No specific installation skills required
- Bridge parts on stock for fast delivery



Construction site bridge in Chile



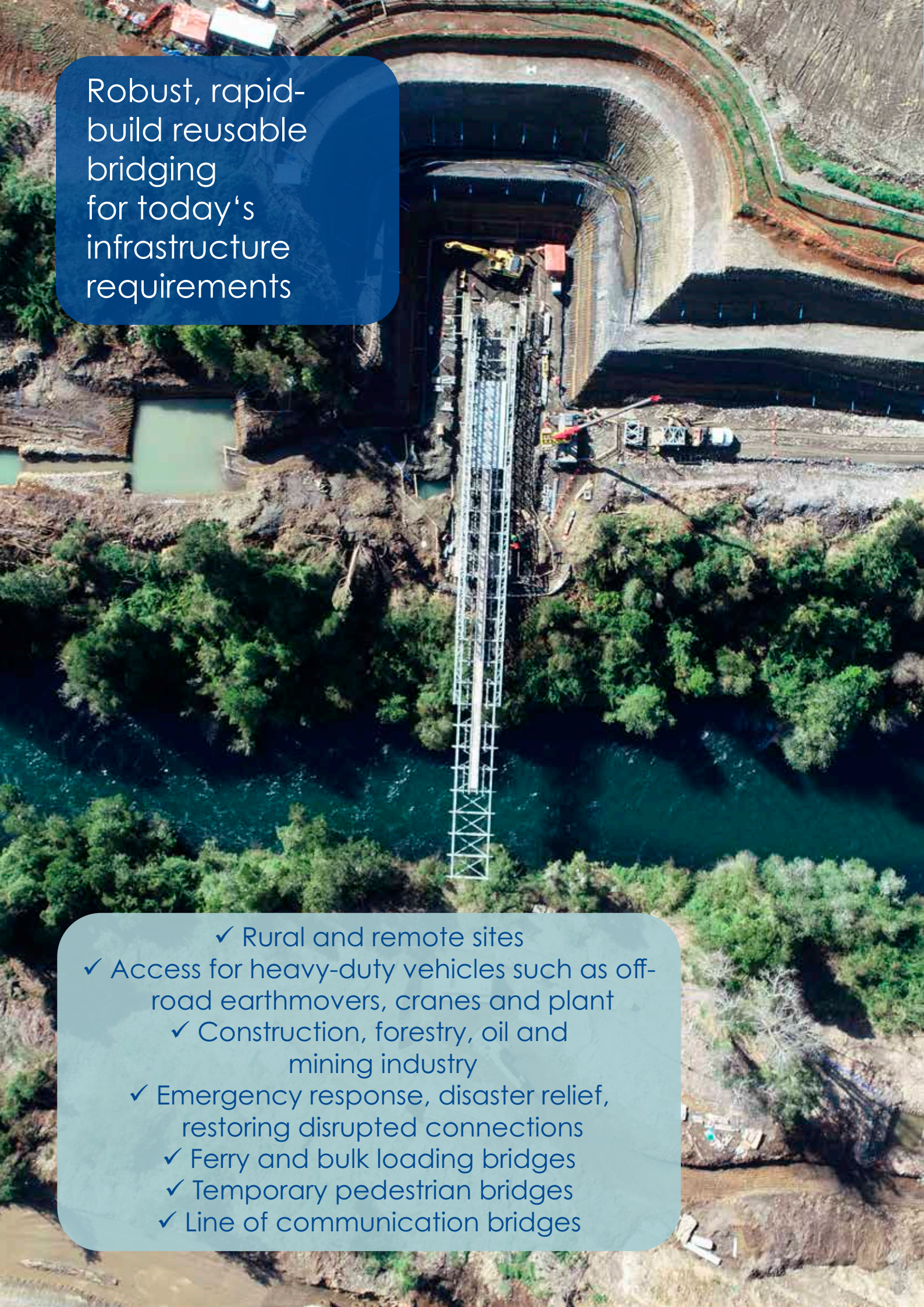
Emergency response bridge in Thailand



Bulk loading bridge in the Netherlands

< 40m

Robust, rapid-build reusable bridging for today's infrastructure requirements



—PEDESTRIAN BRIDGE

Single or multi-span footbridges can be constructed using standard panel bridge components.

Different widths are available: 1.0m, 1.5m and 2.0m. Pedestrian bridges can also be designed as U-frame structures for providing a slender and cost-effective bridge solution. We also offer to supply anti-slip coating and double-mat or steel mesh fencing to increase safety.



Attractive rental and purchase options

- ✓ Rural and remote sites
- ✓ Access for heavy-duty vehicles such as off-road earthmovers, cranes and plant
 - ✓ Construction, forestry, oil and mining industry
- ✓ Emergency response, disaster relief, restoring disrupted connections
- ✓ Ferry and bulk loading bridges
- ✓ Temporary pedestrian bridges
- ✓ Line of communication bridges



Multi-span footbridge with steel tower



Pedestrian U-frame bridge in Germany

—MODULAR BRIDGE



Calaba Bridge (900m), Philippines

Permanent
or semi-
permanent
bridging

In the market of truss-type modular bridges, Waagner-Biro is recognised as one of the most renowned and trusted suppliers worldwide.

The Waagner-Biro modular truss type bridge provides the highest level of flexibility with regard to bridge width, span and traffic load. It is designed for installation by local, unskilled workers using the simplest tools and equipment. It is easily installed using scaffolding or incremental launching. Particularly suited for permanent use on main highways or in remote areas where robust bridges are needed.

Key benefits

- Suitable for different spans, widths and traffic loads
- Modular increments of 4.5m and 5.0m
- Clear spans of up to 140m
- Maximum clear span built so far: 121.5m
- Single (4.20m) and double lane carriageway (7.35m)
- Standardised, compact components
- Concrete or steel deck
- High-strength friction grip (HSFG) bolt connections
- Hot-dip galvanised parts
- Fatigue-resistant construction
- Wind bracing for extra stability of long spans
- Low unit weights of components
- Supports all types of road and railway traffic
- Long service life
- Very little maintenance



Launching of Puente Rio General Viejo

—BEAM BRIDGE *GOLIATH* WBG



For Eurocode and high fatigue loads

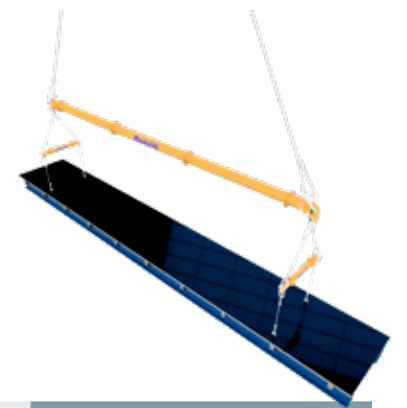
The WBG One-Stop Solution: Modularity redefined.

The Waagner-Biro Beam Bridge *Goliath* is a robust modular bridge solution for single spans of up to 40m. For hire or sale. Designed for temporary or permanent applications. Arriving preassembled, this bridge is easily lifted in by crane and thus ideal for heavy traffic bridging, construction sites and disaster relief operations. Different deck widths can be achieved by laterally coupling the 2.50-metre wide beam bridge modules.



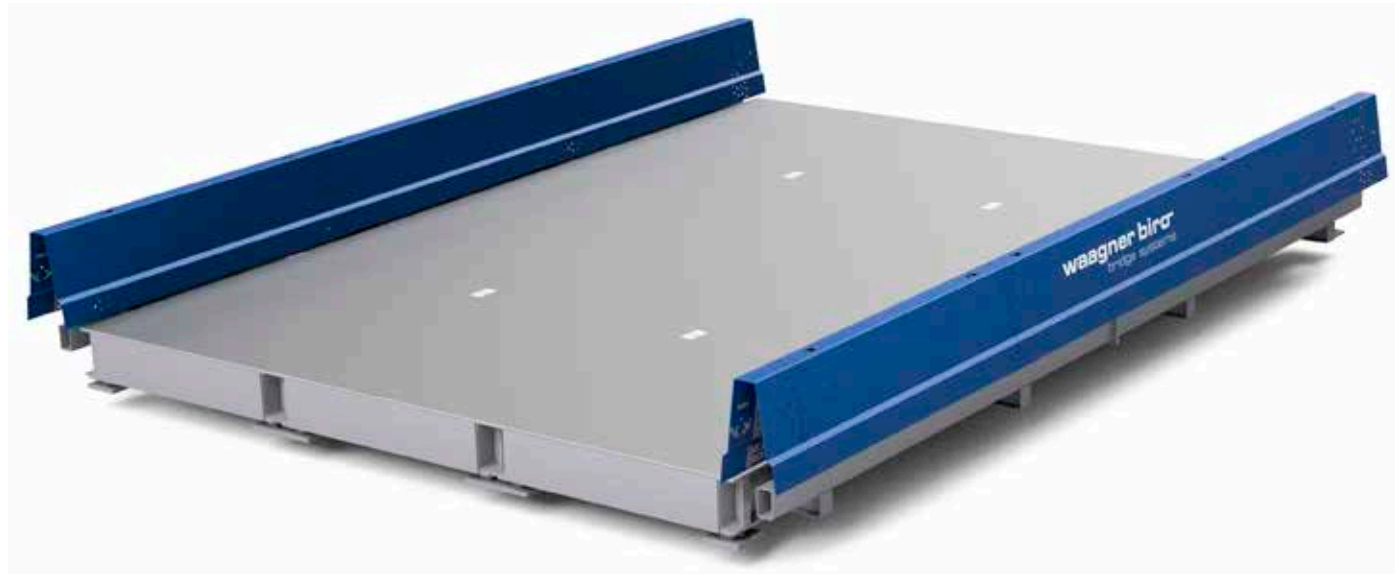
Key benefits

- The WBG consists of prefabricated modules which are interconnected longitudinally and transversely to achieve the required bridge span and width.
- Modular design allows for single, double and multiple lane carriageway widths.
- Modular units 7.5m, 10.5m and 13.5m in length and 2.5m width.
- Designed for high traffic loads and fatigue stresses according to Eurocode.
- All connections are HSFG bolted.
- Galvanised finish or three-layer durable coating with factory-applied anti-slip surface made of epoxy resin with grit.
- For hire or sale.
- Temporary or permanent use.
- Multiple spans are designed as continuous girders on intermediate supports.
- Modules fitted with integrated lifting lugs for installation by crane.
- Bridge modules are preassembled at the factory and delivered directly to the site on flatbed trucks.
- Optional guard rails according to high restraint classes.
- Optional cantilever footwalks available (1.0 to 2.0m).



Module Type	Length (mm)	Width (mm)	Weight (kg)
7.5m Flat Top HV	7500	2500	12200
10.5m Flat Top HV	10500	2500	17100
13.5m Flat Top HV	13500	2500	22000

—BEAM BRIDGE *HERCULES* WBH



For Eurocode and short spans. For hire or sale.

The WBH Rapid-Build Bridge Solution: Economy of Design

The Waagner-Biro Beam Bridge *Hercules* is a modular construction with few individual components. It was developed for heavy loads traffic and single spans of up to 21 metres. The WBH beam bridge is suitable for temporary or semi-permanent applications, for public transportation or construction works. Available for hire or sale. Being delivered preassembled, this bridge is rapidly deployable and easily installed by crane.

Key benefits

- The WBH consists of prefabricated modules which are interconnected transversely to achieve single, double or multiple lane configurations.
- Standard units available in the lengths of 7.5m, 10.5m, 13.5m, 16.5m and 21.0m.
- Standard section width: 2.5m.
- Designed for high traffic loads such as Eurocode.
- Can be installed on existing bridges with insufficient load capacity.
- All connections are HSFG bolted.
- Galvanised finish and/or protected with three layers of coating on top of one another, all in accordance with current standards (C5 corrosion protection class - highest protection class).
- Factory-applied anti-slip surface made of epoxy resin with grit.
- Multiple spans are designed as continuous girders on intermediate supports.
- Modules fitted with integrated lifting lugs for simple installation by crane.
- Bridge modules are preassembled at the factory and delivered directly to the site on flatbed trucks.
- For hire or sale.
- Temporary or permanent use.
- Optional guard rails according to high restraint classes.
- Optional cantilever footwalks available (1.0 to 2.0m).

Module Type	Length (mm)	Width (mm)	Weight (kg)
7.5m Flat Top HV	7500	2500	8500
10.5m Flat Top HV	10500	2500	11900
13.5m Flat Top HV	13500	2500	15200
16.5m Flat Top HV	16500	2500	18600
21.0m Flat Top HV	21000	2500	23600



—PORTRAIT



Waagner-Biro Bridge Systems is an international full-service provider of modular steel bridge solutions.

Originating in Austria, the Waagner-Biro Bridge Systems group of companies (Waagner-Biro Bridge Systems AG) looks back to 160 years of proud history of steel bridge engineering excellence across the globe.

Waagner-Biro's reputation in its core markets Europe, Asia, South America and Africa is based on high quality, innovative solutions and a consistent focus on customer needs. Several thousand bridges built the world over offer ample proof.

Waagner-Biro Bridge Systems AG has subsidiaries in three countries: Waagner-Biro Bridge Systems GmbH Austria, Waagner-Biro Indonesia PT and Waagner-Biro Ukraine.



Jombang madiun Railway Bridges, East Java, Indonesia



Sei Wampu Bridge Construction, Indonesia

Please visit
www.waagnerbiro-bridgesystems.com for more information on its wide range of products and services



Puente Río General Viejo, Costa Rica

—CONTACT

— HQ IN AUSTRIA

Waagner-Biro Bridge Systems AG

Gaslaternenweg 4,
8041 Graz,
Austria

Waagner-Biro Bridge Systems GmbH

Wipplingerstrasse 25,
1010 Vienna,
Austria

E: bridge@wb-bs.com

W: www.waagnerbiro-bridgesystems.com

— INDONESIA

P.T. Waagner-Biro Indonesia

Talavera Office Park Building Lt.
11 Unit #02 & #03 Jl.
Jl. Let. Jen. TB Simatupang Kav. 22–26
Jakarta 12430
Indonesia

T: + 62/21/7592 4355

F: + 62/21/7592 4358

E: indonesia@waagnerbiro-bridgesystems.com



Sei Wampu Bridge Construction, Indonesia



Panel bridge Kuchelau, Austria



Panel bridge installation in Austria



Belitung Bridge, Indonesia

OUR WEBSITE:
WAAGNERBIRO-
BRIDGESYSTEMS.COM



Imprint:

Editor, layout and publisher: Waagner-Biro Bridge Systems AG,
Gaslaternenweg 4, 8041 Graz, Austria
Contact: bridge@wb-bs.com
Website: www.waagnerbiro-bridgesystems.com