Simple assembly & Temporary Bridge Technology

Bridge on your NEEDS

As specialists of bridges
simple assembly bridges can be provided

PABRIS®
PANEL BRIDGE SYSTEM

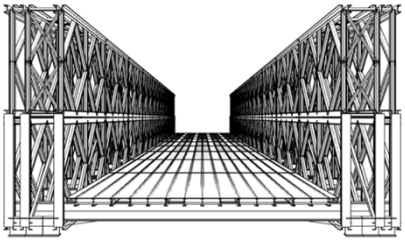
YBC Yokogawa Bridge

Conventional Bailey Bridge

Outline

Many Bailey bridges, which are rapid assembly bridges, have been built mainly in East Asia to restore bridges destroyed in wars and civil wars. Therefore, in these regions, steel bridges are also recognized as equal to Bailey bridges.

Bailey Bridge



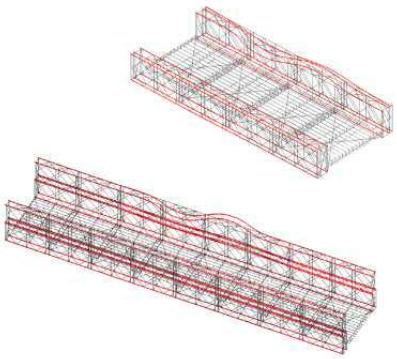
Structural Details

Fabrication at the site

Problems of Bailey Bridge

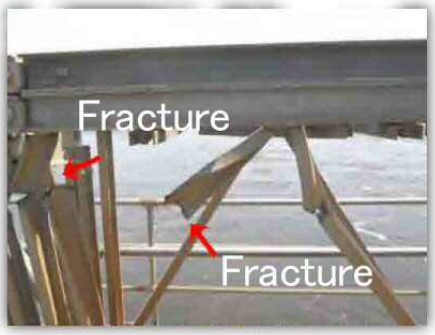
■ Load Capacity

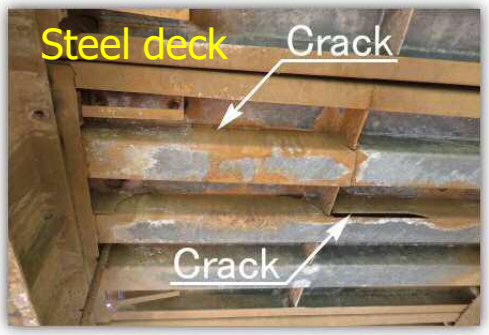
Bridge collapse due to buckling of steel members



Bailey bridges of pony truss structure type are prone to buckling and sudden collapse due to over-loaded vehicular traffic.

■ Fatigue Durability

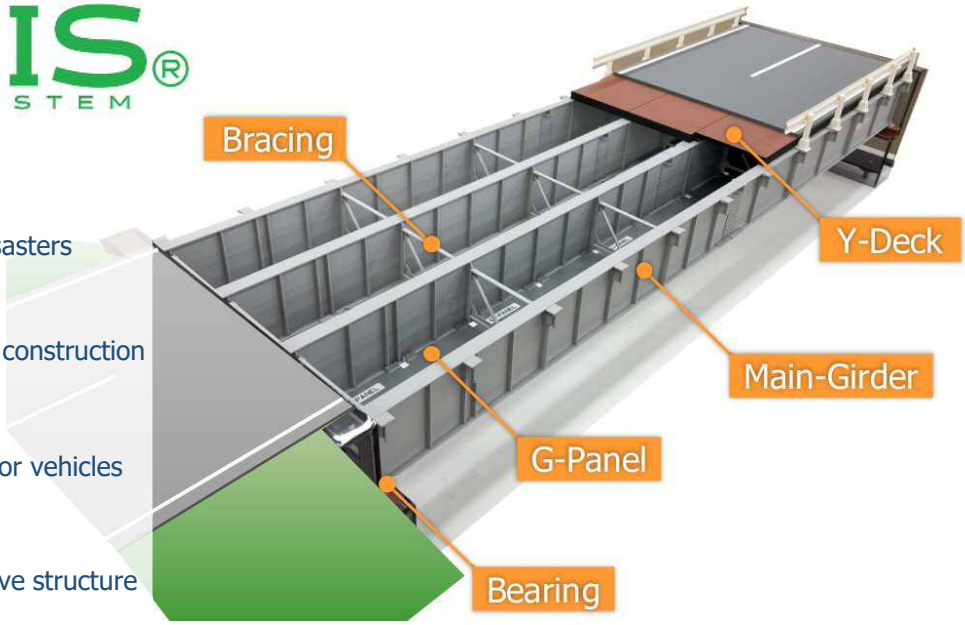




Fracture and Fatigue cracks due to heavy traffic

Inadequate quality welds can cause fatigue cracks and fracture of the steel member due to repeated loading.

PABRIS®
PANEL BRIDGE SYSTEM



- ✓ **Recovery**
  For emergency recovery from disasters
- ✓ **Detour**
  For a detour route during bridge construction
- ✓ **Temporary**
  For a temporary jetty for cranes or vehicles
- ✓ **Speedy**
  Short-term erection with distinctive structure

In addition to its high functionality and economic efficiency as a temporary bridge, PABRIS also has the flexibility to meet various needs. PABRIS emergency temporary bridge has already proven its high potential in many application.

Reroute for replacement construction

Temporary bridge for construction road

Emergency bridges in times of disaster

Temporary Jetties for cranes and other work

Temporary bridge for pedestrian walkway

"PABRIS®" achieves functionality, ease of installation, and economic efficiency

Light Weight

The use of SM490Y material for the main girder reduces weight, and the Y-deck is based on a steel deck system, which results in a light weight of 161 kg/m^2. This also reduces the load on the girders and substructure.

Low Noise

The Y-deck is fastened directly to the main girder with high-tension bolts, which greatly reduces noise during vehicle traffic. Low noise, which could not be achieved with conventional covering plates, is realized.

Short Term Construction

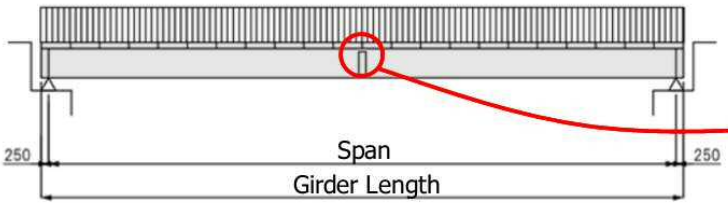
The unique structure (face-touch connection of compression flange), which does not use splice plates on the upper flange, realizes short-term construction. The unique bolts that can be removed when dismantled also realizes quick construction.

Wide Variety of Applications

It can be used not only for roadways and sidewalks, but also as a temporary bridge for heavy machinery with special loads. Girder lengths range from 14 m to a maximum of 36 m at 2 m pitches, and widths are unlimited at 2 m pitches.

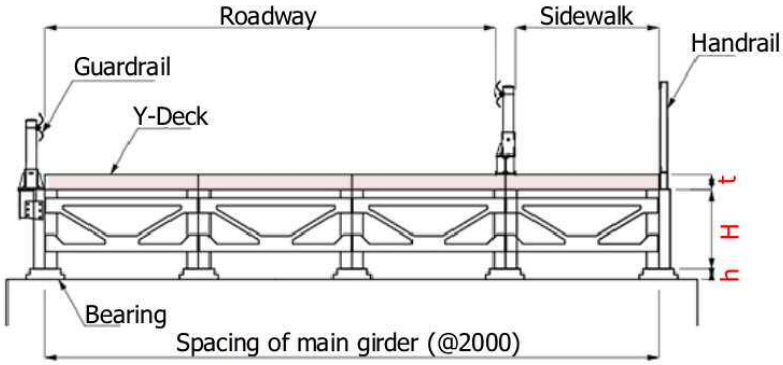
Specification

Side View

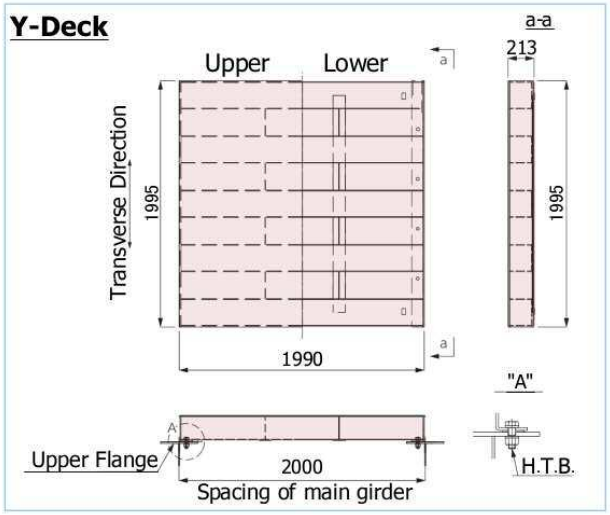


Detail of Flange Joint

Cross Section View



Y-Deck



	L Type	H Type	HG Type
Bridge Type	Single Span Girder Bridge		
Girder Length	14m～24m	14m～36m	18m～22m
Width	2m～∞		
t : Y-Deck Thickness	213mm		
H : Girder Height	1,049mm	1,495mm	1,750mm
h : Bearing Height	95mm		116mm

Girder length and width are available in 2m pitch.

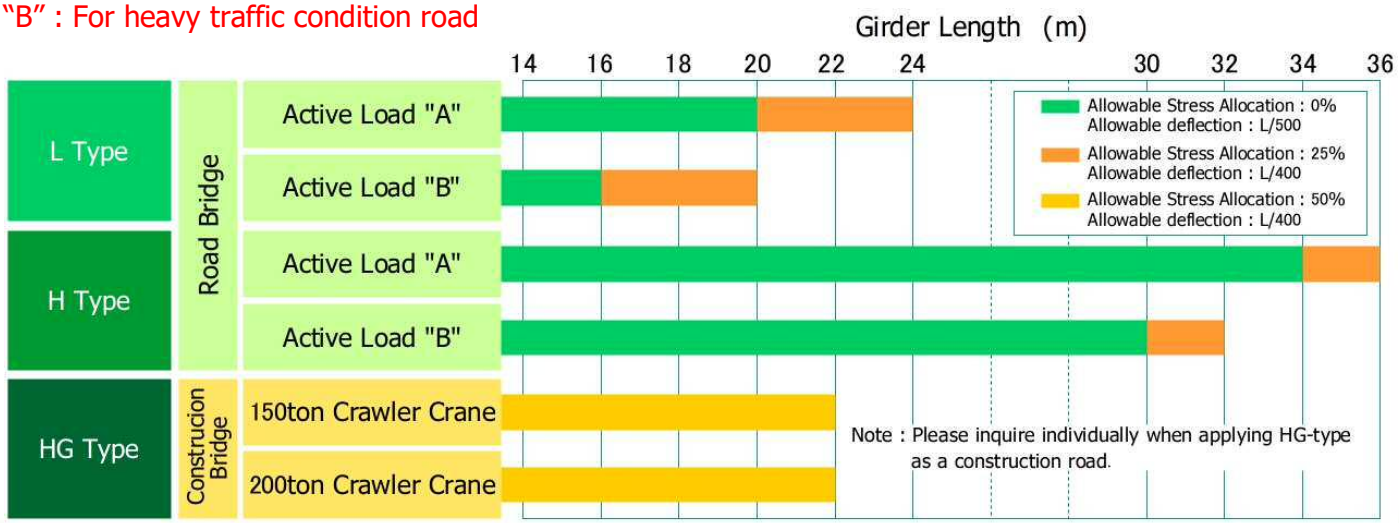
HG-Type is a more robust "PABRIS" designed to accommodate heavy equipment (cranes, etc.) for work.

Application

The active load conditions ("A" and "B") determine the applicable bridge length.

"A" : For rural area road

"B" : For heavy traffic condition road



Combination of Girders

By combining three different lengths of girders (7m, 9m, 11m) and an intermediate girder of 10m length, the total length can be from 14m to 36m.

Girder Length	Combination of Girder Length
14m	7m 7m
16m	7m 9m
18m	9m 9m
20m	9m 11m
22m	11m 11m
24m	7m 10m 7m

Girder Length	Combination of Girder Length
26m	7m 10m 9m
28m	9m 10m 9m
30m	9m 10m 11m
32m	11m 10m 11m
34m	7m 10m 10m 7m
36m	7m 10m 10m 9m

Achievements

Case-1

Nijuichihama Temporary Br.

The tsunami caused by the Great East Japan Earthquake (2011) scoured the embankment around the "Nijuichihama Bridge" on Route 45, making it impassable. To secure lifelines quickly, "PABRIS", which can be constructed in a short period of time, was adopted as an emergency temporary bridge.

DATA
Objective : Disaster Emergency Bridge (Road Br.)
Bridge Length : 30m
Width : 6m ×2 Bridges
Location : Miyagi, JAPAN

Case-2

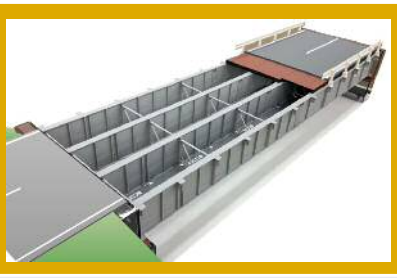
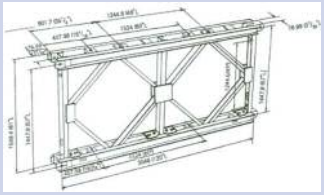
Matsukawa Temporary Br.

The piers and girders of the center span of the Matsukawa Bridge tilted due to rising water caused by torrential rains, making the bridge impassable. "PABRIS" was adopted as a "U-shaped" detour route for the center span, and the bridge was opened to traffic at an early stage.

DATA
Objective : Disaster Emergency Bridge (Road Br.)
Bridge Length : 112m
Width : 4m~16m
Location : Niigata, JAPAN

Yokogawa Bridge Corp.
https://www.yokogawa-bridge.co.jp/pabris/point.shtml
E-mail : overseas@yokogawa-bridge.co.jp

Comparison of Bailey Bridge & PABRIS®

Item	Bailey Bridge	PABRIS®
Image		
Type	Pony truss	Plate girder (Option : truss type available)
Design	No need (In advance)	No need (In advance)
Span	Up to 60m	14～36m (Truss type : ～72m)
Size (Bridge member)	 H 1.5m X L 3.0m ～	 H 1.0m X L 7.0m ～ (H 1.5m X L 7.0m @Type H)
Panel weight	260kg ～	121 ～208kg (175～285kg @Type H)
Deck	Steel / checker	Steel / checker / Concrete
Corrosion protect	Galvanized	Galvanized / Paint
Bearing	Hinge	Rocking / Plate
Fasteners	Pin / Bolts	TCB / Tension Bolts
Design load	British Standard	Japan Highway Spec. (Two type of design load)