

Bridge Grating Solutions

Components & Systems



OHIO GRATINGS, INC.



▲ Chicago, IL

The historic LaSalle Street Bridge in the heart of Chicago was built in 1928, and a new riveted steel bridge deck was put in service during a 1971 renovation project. This busy bridge is exposed to an annual average daily traffic of about 27,000 vehicles per day. An inspection in September 2010 demonstrated that the riveted grating is still providing good service after nearly 40 years of heavy use.

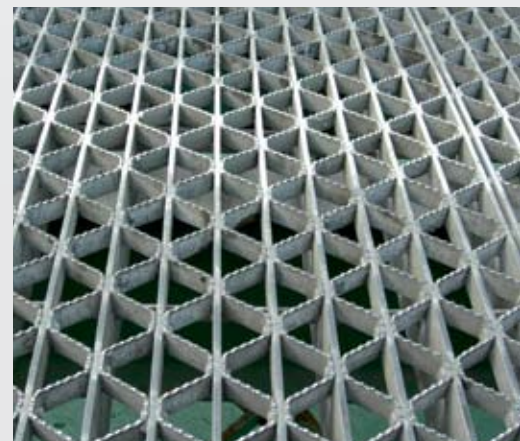


Vehicular Bridges Heavy Duty Riveted Grating

Riveted grating was first developed and used in subways in New York City in the early 1900's. Over the years this product has been used in various applications but has been particularly successful on bridges requiring a lighter weight decking material. The lighter weight helps reduce the dead load on the bridge which is particularly important on moveable bridges including lift, swing and bascule styles. There are many examples around the country where heavy duty riveted grating has been used for decades without any issues such as fatigue failures.

Why Choose Riveted?

- Strong, Fatigue Resistant Design
- Rivets are below top surface in lower stress areas
- Connecting bars spread the load and add strength
- Flexibility in bar sizes and configurations
- Serrated surface available
- Time Tested – Long Life



▲ Long Island, NY

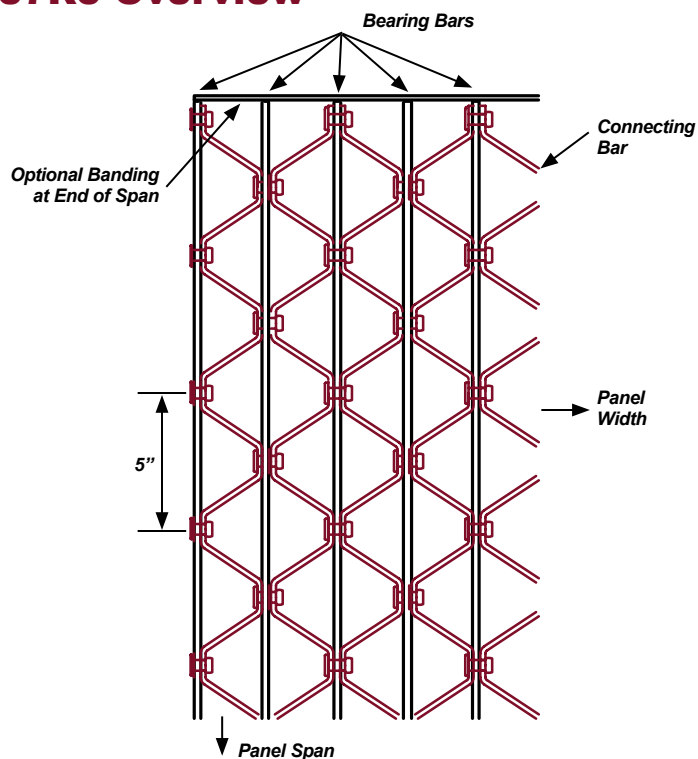
The Robert Moses Causeway Southbound Bridge at Captree State Park was built in 1951, and in 2007, when these photos were taken, the original riveted bridge deck was still in service.



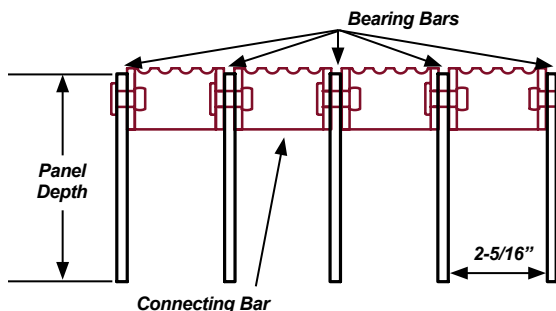
Types of Riveted Grating: Standard 37R5

Below is our original heavy duty riveted grating with bearing bars spaced at 2-5/16" face to face and joined by a connecting (reticuline) bar using rivets at 5" centers. This connection forms a truss-like grid which is best suited to handle the high impact and lateral forces encountered in bridge deck applications. Heavy Duty Riveted continues to be the choice of many engineers due to its reliability and durability.

37R5 Overview



37R5 Section View



Bay City, MI

The Veterans Memorial Bridge in Bay City Michigan carries the four lane MI highway 25 over the Saginaw River. This Bascule Bridge was originally constructed in 1957. In 1994 a major renovation of the bridge included a new 5" Deep Heavy Duty Riveted Bridge Deck (OGI's 37R5). These photos were taken in February 2009. After over 15 years of service, this deck is still in "like new" condition.

Types of Riveted Grating: 37R5 Lite

For applications requiring an even lighter weight product per square foot, OGI offers our 37R5 Lite. It is up to 30% lighter than our standard riveted product and can be used for applications requiring concrete filled decking.

Over 26,000 SF of 37R5 Lite serrated 5" x 3/8" riveted grating with a galvanized finish was used on the Grosse Ile bridge deck portion of the project pictured to the bottom right.

This project also included 2,424 SF of 37R5 Lite riveted grating with a galvanized finish that was concrete filled with pans and rebar.

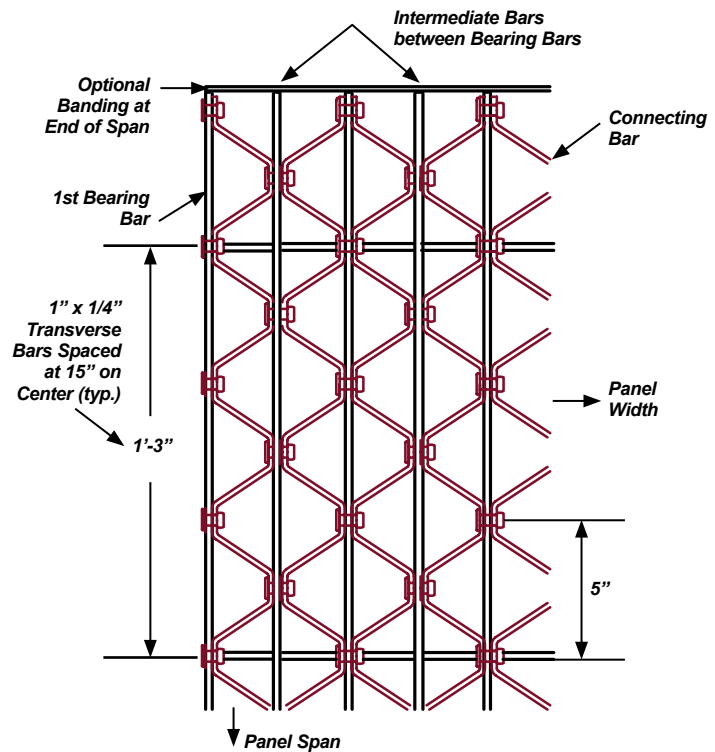


▲ Grosse Ile, MI

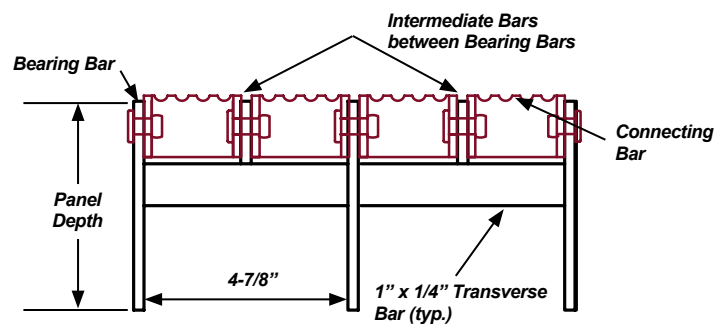
About 25 miles south of Detroit MI, the island of Grosse Ile is served by a 1,400 foot bridge spanning over the Trenton branch of the Detroit River. Most of the span is fixed with a 340 ft swing portion near the east end. The bridge was built in 1930 with a concrete deck surface. In 1980 a welded steel deck was installed in order to lighten the dead load on the bridge to accommodate heavier trucks. By 2006, many cracks had developed in the welded bridge deck and patch plates were required. In 2007, a complete overhaul was completed on this bridge including a new riveted bridge deck, aluminum plank sidewalks and maintenance platforms. ►



37R5 Lite Overview



37R5 Lite Section View





Alva, FL

Ohio Gratings, Inc. completed this project in July of 2010. The grating panels covered the two leafs of a 2,900 square foot Bascule Bridge. Because the supports for the Alva Bridge were at 4' 5-1/4", OGI developed a new product to carry the H-20 load for this application, while keeping the weight of the panels low. This riveted grating product includes the 5" x 3" x 1/4" angles instead of the standard rectangular bar which provided improved properties. ►

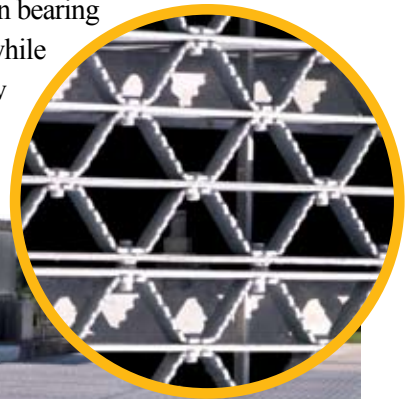


Grosse Ile, MI

In addition to the vehicular bridge decking, OGI provided 2 other components to complete this overhaul.

Types of Riveted Grating: L-Series

OGI's R&D department constantly reviews existing product lines looking for ways to improve. In the case of our riveted designs, a new "L" shape bearing bar was developed for applications where supports are further apart. The wider spacing between bearing bars keeps the weight per sq. ft. down while meeting loading requirements. This new design will give years of service at a reasonable cost.



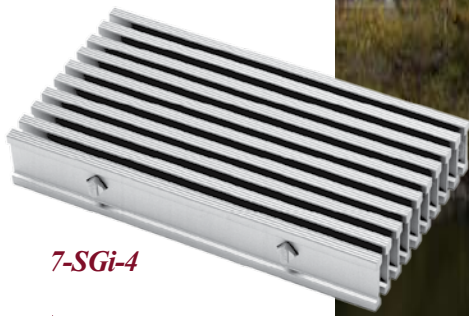
Additional Components: Lightweight & Slip Resistant Sidewalks

In addition to the traditional heavy duty riveted grating products, OGI also provides a variety of materials manufactured from aluminum, carbon and stainless steel. These products can be used for pedestrian walkways or maintenance platforms.

Over 9,600 square feet of Aluminum ADA Punched Plank with a Slip-NOT surface and 1,937 square feet of aluminum LiteBar was provided for the pedestrian walkways at Grosse Ile, MI. (*pictured middle & bottom left*). Our products are recyclable and are Made in the USA.

Fastening Methods

While many of our riveted decks are welded down to the support structure, there are numerous ways to bolt down our riveted systems. Our engineering group can work with your engineering team on specific applications to provide an appropriate attaching method.



7-SGi-4



Chicago, IL
Stearns Quarry was originally an active limestone quarry from 1830 to 1969 and in later years was used as a landfill. This area was recently transformed into a 27 acre park including athletic fields, a running track, sledding mound, fishing pond/pier and an elevated walking structure for viewing of the quarry.

The designers of this project required an open metal type decking system to provide an ADA Compliant walking surface, but to also allow for pedestrians to view the water, grasses and landscaping through the decking.

OGI's Aluminum LiteBar® (11SGLi4) was chosen and over 11,000 square feet was used on the walkways and platforms.

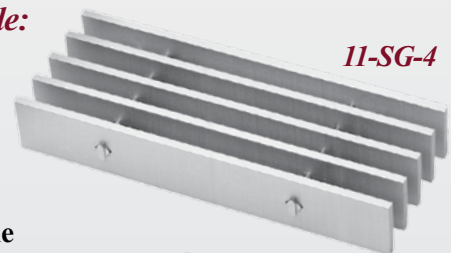


Pedestrian Bridges & Sidewalks

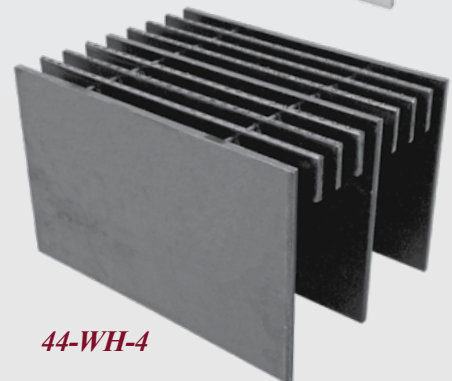
In recent years, federal, state and local government agencies have joined the movement to create more public recreational areas. These public areas include nature/hiking trails, parks and recreational facilities, bicycle paths, and other public venues like outdoor theaters. Metal bar grating products are being specified more frequently due to their longevity and recyclability.

Additional Benefits Include:

- Strong and lightweight
- Manufactured from aluminum, carbon or stainless steel
- Various finishes available
- Slip resistant surfaces available
- Easy installation
- Meet and/or exceed ADA Requirements
- High heel and bicycle friendly
- Infinitely Recyclable
- Made in the USA



11-SG-4



44-WH-4



St. Matthews, KY ►

Bear Grass Creek Nature Preserve is a 12 acre park which acts as a buffer between residential neighborhoods and a shopping mall that is split by Bear Creek, a tributary of the Ohio River. The original design of the wetlands was incorrectly graded, so in order to correct this to decrease flooding, the entire area underwent a topography change. This area was turned into a nature preserve which included a park and nature trails. Over 3,000 SF of close mesh Carbon Steel DoveTail Grating (galvanized with a SlipNot finish) was used to make this park accessible to all residents, complying to ADA Requirements and being both bicycle and high heel friendly.



Munroe Falls, OH

OGI's Diagonal (ADA) Aluminum Punched Plank was chosen for the rework of this pedestrian bridge / observation platform. As part of the Summit County Metroparks, a material that complied with ADA Standards was required. OGI's plank was selected not only because it met those standards, but it was also lightweight for easy installation, had built in striations for slip resistance and an open punch pattern allowing for airflow and water drainage.



St. Louis, MO ►

The "City Garden" park is an innovation at the heart of the city of Saint Louis, featuring areas with gardens next to contemporary art sculptures. For this project, four Wheels n' Heels® InVent Stainless Steel panels with AlGrip Slip Resistant surface were utilized to cover the overflow trenches in the "Rain Garden" area and are part of the sidewalk. The bars on the surface of the panels are spanning along the width of the sidewalks. The grating is also capable of supporting a wheel load of 2,500 lbs on a 9" x 9" tire print for maintenance vehicles, through the heavy 3" x 1/4" bearing bars that are concealed below the surface bars.



Laboratory Testing Results for Heavy Duty Riveted Grating

In early 2009, OGI performed Static and Fatigue testing at the University of Akron in Ohio. The riveted grating panels were tested under “worst case” load conditions by considering the maximum support spacing under the H-20 Heavy Duty AASHTO load including impact. For the Fatigue test, the grating exceeded 1,300,000 cycles of this extreme worst case loading. The laboratory testing confirms that the heavy duty riveted bridge deck can be relied upon to provide decades of service even when exposed to continuous heavy truck loading. If you would like more detailed information about the testing and results, please contact us.



▲ *Akron, OH*

Riveted grating panels were tested under “worst case” load conditions.

Additional Products Available – Visit our website for more information.



We Make It Right & Ship When Promised...Since 1970

For over 40 years, Ohio Gratings, Inc. has been a leading manufacturer of metal bar grating products. Our in-house engineers will be happy to help you with any questions you may have about our products or any projects that you are working on. If you would like to learn more about our products, OGI offers educational sessions (Lunch and Learns) on all of our product offerings. In these sessions we review all of our products and their appropriate applications. Call us at 800.321.9800 for additional information, full line catalog or product specifications.

Other Products & Services:

- Knowledgeable sales staff
- Experienced sales department
- In-house engineering
- Custom fabrication
- Value engineered solutions
- Versatile products for all project types
- On-site powder coat line



▲ *Heavy Duty Welded Grating used on a small rural bridge.*



OHIO GRATINGS, INC.

5299 Southway Street SW □ Canton, OH 44706

1-800-321-9800 □ Fax 330-477-7872 □ www.ohiogratings.com