BGFMA Open Grid Design Properties and Span Capacities

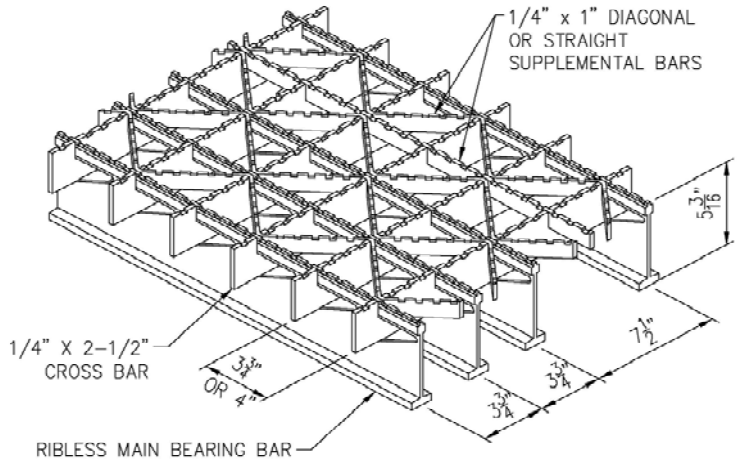
Diagonal Open Grid - Ribless (RL) Main Bearing Bar

Deck Code	Deck Parameters				Section Properties		
	Main Bar Spacing (in.)	Cross Bar Spacing (in.)	Number of Str./Dia. Supp'l Bars	Total Height (in.)	Moment of Inertia (in^4/ft)	Section Modulus (in^3/ft)	
						Top of Steel	Bottom of Steel
DRL-3.75-3.75	3.75	3.75	1	5.187	16.16	5.15	7.88
DRL-3.75-4.00	3.75	4.00	1	5.187	16.16	5.15	7.88
DRL-7.50-3.75	7.50	3.75	3	5.187	10.11	3.63	4.21
DRL-7.50-4.00	7.50	4.00	3	5.187	10.11	3.63	4.21

Deck Code	HS20 Maximum Continuous Span (Center to Center) (ft.)			HS25 Maximum Continuous Span (Center to Center) (ft.)			Approximate Weight (psf)
	Transverse/Parallel to Traffic		Deflection	Transverse/Parallel to Traffic		Deflection	
	36 ksi	50 ksi	L/800	36 ksi	50 ksi	L/800	
DRL-3.75-3.75	6.00	7.97	6.03	5.75	7.63	5.90	26.8
DRL-3.75-4.00	6.00	7.97	6.03	5.75	7.63	5.90	26.5
DRL-7.50-3.75	5.22	6.93	5.28	4.86	6.45	5.08	20.0
DRL-7.50-4.00	5.22	6.93	5.28	4.87	6.45	5.08	19.6

Design Notes:

1. Designs are in accordance with AASHTO (17th Edition - 2002) Allowable Stress Design Method and include 30% Impact.
2. Designs assume a supporting beam 7 inch flange width.
3. Designs valid for Maximum Continuous, Center-to-Center Spans, based on the following:
   a) 36 or 50 ksi minimum yield strength.
   b) 20 ksi and 27 ksi Allowable Bending Stress for 36 ksi and 50 ksi yield stress respectively.
   c) 50% of supplemental and diagonal bars assumed to contribute to the section properties.
4. Deflection span limits as shown above are independent of the main rail orientation for AASHTO ASD methods of analysis and the results shown are independent of the steel strength stress limits. (i.e. For this chart, it is possible that the grid system is overstressed for a given deflection criteria. Both stresses and deflection must be analyzed together by the user prior to final design decision.)
5. All punched holes, slots and serrations in steel members are deducted when computing section properties.
6. Fatigue not considered for above published span limits.
7. Approximate weights include a 6% increase due to galvanization of bare steel and does not include trim plates.
8. The information provided herein was prepared with reference to generally accepted engineering practices. It is the responsibility of the user of this information to independently verify such information and determine its applicability to any particular project or application. The BGFMA assumes no liability for use of any information contained herein.



BGFMA Open Grid Design Properties and Span Capacities

Rectangular Open Grid - Ribless (RL) Main Bearing Bar

Deck Code	Deck Parameters				Section Properties		
	Main Bar Spacing (in.)	Cross Bar Spacing (in.)	Number of Supp'l Bars	Total Height (in.)	Moment of Inertia (in^4/ft)	Section Modulus (in^3/ft)	
						Top of Steel	Bottom of Steel
RRL-2.0	2.00	4.00	0	5.187	25.55	7.61	13.96
RRL-3.0	3.00	4.00	0	5.187	17.03	5.07	9.31
RRL-4.1	4.00	4.00	1	5.187	15.15	4.83	7.39
RRL-6.2	6.00	4.00	2	5.187	11.46	3.89	5.12
RRL-8.3	8.00	4.00	3	5.187	9.47	3.40	3.94
RRL-8.2	8.00	4.00	2	5.187	8.59	2.92	3.84

Deck Code	HS20 Maximum Continuous Span (Center to Center) (ft.)			HS25 Maximum Continuous Span (Center to Center) (ft.)			Approximate Weight (psf)
	Transverse/Parallel to Traffic		Deflection	Transverse/Parallel to Traffic		Deflection	
	36 ksi	50 ksi	L/800	36 ksi	50 ksi	L/800	
RRL-2.0	7.79	10.36	7.18	7.59	10.10	7.08	37.2
RRL-3.0	5.66	7.52	6.05	5.46	7.25	5.94	27.0
RRL-4.1	5.73	7.61	5.89	5.48	7.27	5.75	24.3
RRL-6.2	5.19	6.88	5.41	4.88	6.48	5.24	20.0
RRL-8.3	5.03	6.67	5.17	4.67	6.19	4.97	17.9
RRL-8.2	4.36	5.77	4.93	4.05	5.36	4.73	16.7

Design Notes:

1. Designs are in accordance with AASHTO (17th Edition - 2002) Allowable Stress Design Method and include 30% Impact.
2. Designs assume a supporting beam 7 inch flange width.
3. Designs valid for Maximum Continuous, Center-to-Center Spans, based on the following:
   a) 36 or 50 ksi minimum yield strength.
   b) 20 ksi and 27 ksi Allowable Bending Stress for 36 ksi and 50 ksi yield stress respectively.
   c) 50% of supplemental bars assumed to contribute to the section properties.
4. Deflection span limits as shown above are independent of the main rail orientation for AASHTO ASD methods of analysis and the results shown are independent of the steel strength stress limits. (i.e. For this chart, it is possible that the grid system is overstressed for a given deflection criteria. Both stresses and deflection must be analyzed together by the user prior to final design decision.)
5. All punched holes, slots and serrations in steel members are deducted when computing section properties.
6. Fatigue not considered for above published span limits.
7. Approximate weights include a 6% increase due to galvanization of bare steel and does not include trim plates.
8. The information provided herein was prepared with reference to generally accepted engineering practices. It is the responsibility of the user of this information to independently verify such information and determine its applicability to any particular project or application. The BGFMA assumes no liability for use of any information contained herein.