

# Bridge-Dek® & Rhino-Dek®

STAY-IN-PLACE DECK FORMING SYSTEMS



**NEW MILLENNIUM**  
BUILDING SYSTEMS  
**Building a better steel experience.**



# Performance- and cost-optimized stay-in-place deck forming systems



## BRIDGE-DEK® & RHINO-DEK®

New Millennium is a leader in the design and manufacturing of steel building systems used throughout the construction industry. Bridge-Dek® and Rhino-Dek® systems offer flexibility for developing stay-in-place deck forming systems used in both concrete and steel bridge structures. Contractors now have efficient methods for forming deck slabs in new construction and bridge rehabilitation projects.

Manufactured in a controlled environment, Bridge-Dek® and Rhino-Dek® are fabricated from high-strength galvanized steel to meet design requirements. Both systems include 4 standard profiles and numerous matching rebar profiles that economically span distances up to 14 feet.

### Advantages:

- Reduces construction time
- Creates a safe work platform
- Integrates with steel or concrete girders
- Easy to stage materials
- No forms to strip



Contact the Bridge-Dek® specialists at 803-251-5165

## ENGINEERED FOR PERFORMANCE AND SAFETY

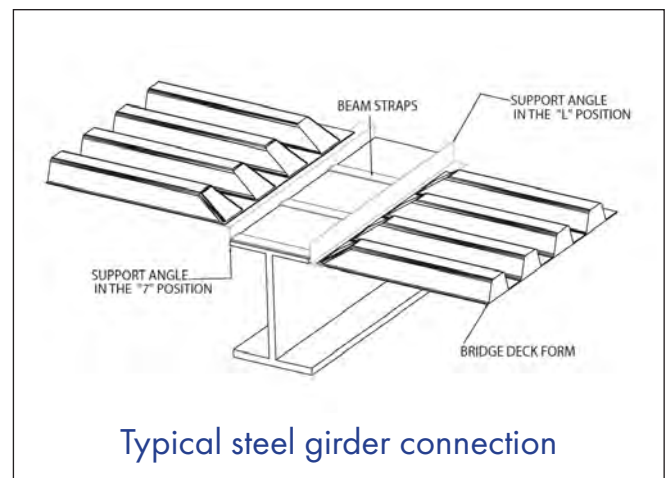
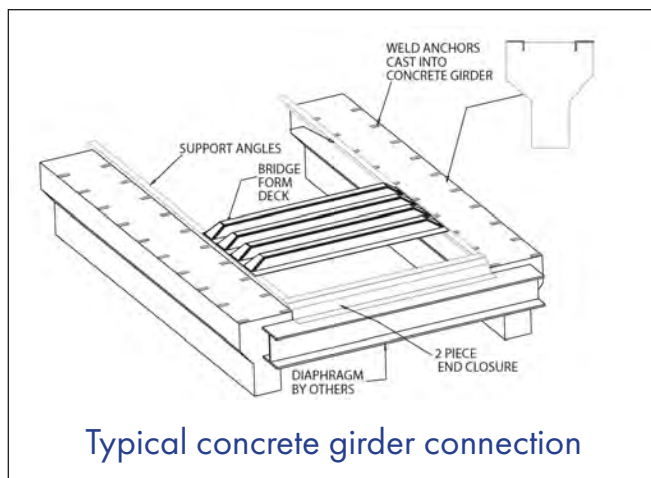
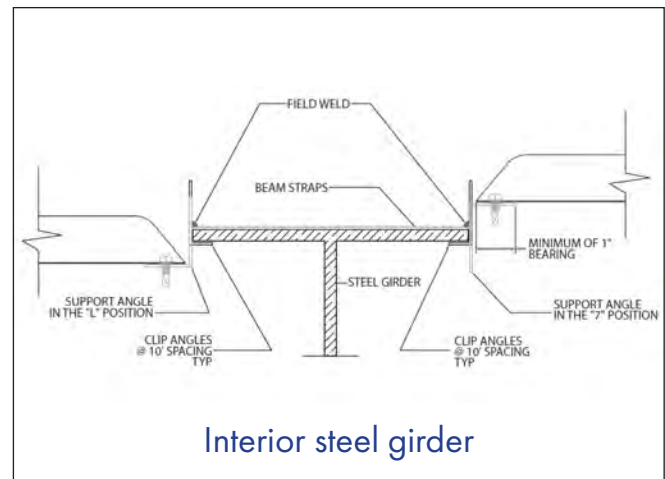
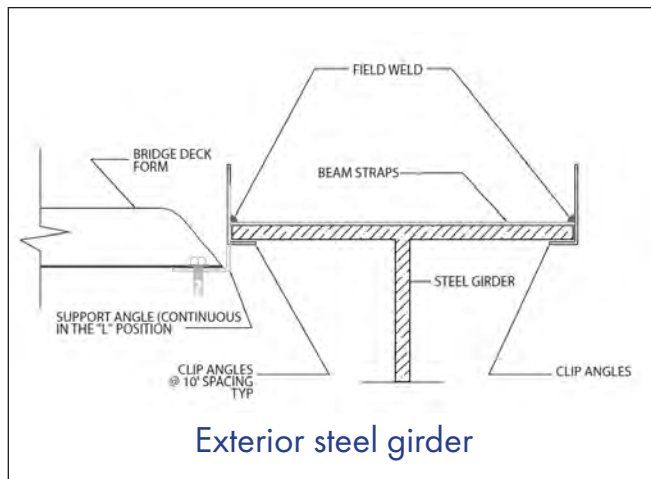


All deck and accessories are fabricated from steel conforming to ASTM Specification A-653 Grade 50 having a minimum coating class of G165 according to ASTM Specification A-924. The steel unit working stress will not exceed 0.725 of the specific minimum yield strength or a maximum of 36,000 psi.

Bridge-Dek® and Rhino-Dek® are designed based on the applicable dead load (deflection), which will not be less than 120 psf. The minimum total load (stress) will be the actual dead load (weight of concrete and deck) plus an additional 50 psf construction load. Bridge deck design incorporates the deflection and other design criteria required by the applicable governing jurisdictions. Typically, deflection under the dead load ( $W_d$ ) will not exceed the design span ( $L$ ) divided by 180 or  $1/2$ ", whichever is less.

Physical design properties are calculated in accordance to the latest published edition of the American Iron and Steel Institute's (AISI) "Specifications for the Design of Cold-Formed Steel."

### Typical section details

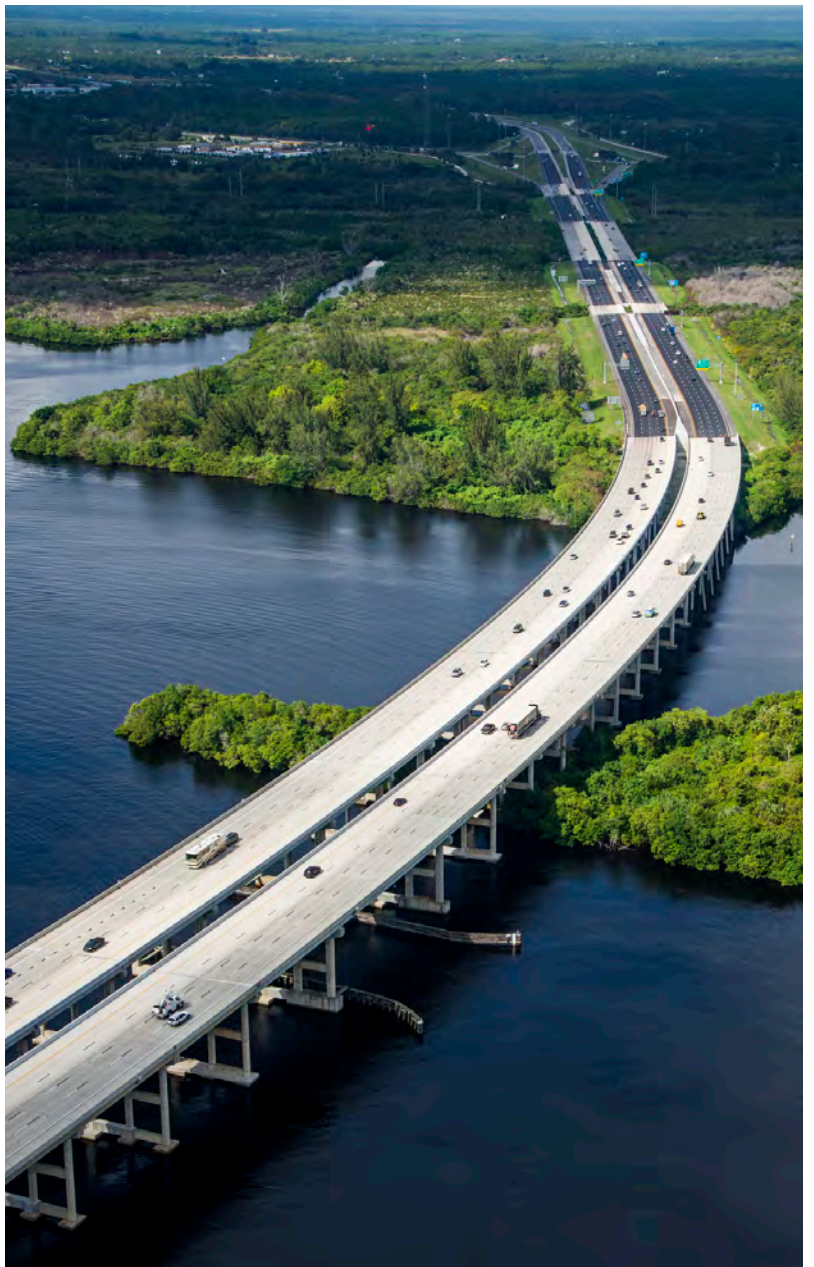




## High-strength galvanized stay-in-place deck forming systems

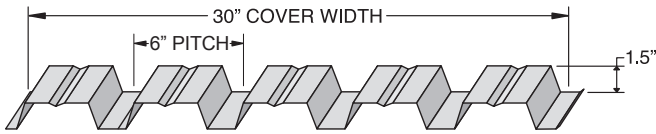
Suitable for new construction and bridge rehabilitation, Bridge-Dek® is available in 4 standard profiles and numerous matching rebar profiles that can accommodate design spans up to 14 feet.

- Spans up to 14 feet
- 4 standard profiles and numerous matching rebar profiles
- Factory-closed ends speed installation



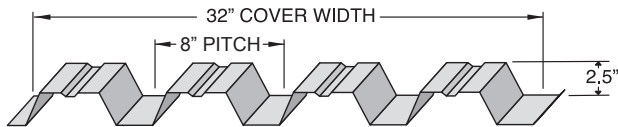
Contact the Bridge-Dek® specialists at 803-251-5165

# BRIDGE-DEK® — IDEAL FOR NEW CONSTRUCTION AND REHABILITATION



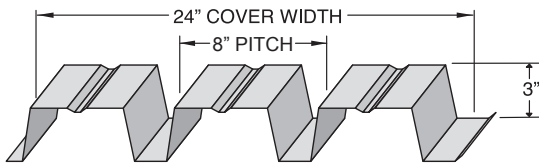
Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)
22 - (.030)	0.166	0.196	1.81
21 - (.033)	0.188	0.216	1.99
20 - (.036)	0.210	0.238	2.16

fy = 50 ksi for gages 22 through 20  
Concrete add (in.) = 0.53



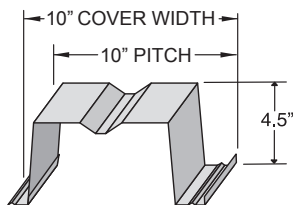
Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)
22 - (.030)	0.532	0.381	1.93
21 - (.033)	0.590	0.423	2.13
20 - (.036)	0.645	0.462	2.31

fy = 50 ksi for gages 22 through 20  
Concrete add (in.) = 1.00



Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)
22 - (.030)	0.795	0.441	2.23
21 - (.033)	0.900	0.492	2.45
20 - (.036)	1.002	0.541	2.67
19 - (.042)	1.208	0.642	3.11
18 - (.047)	1.360	0.725	3.48
17 - (.053)	1.540	0.820	3.91
16 - (.059)	1.721	0.913	4.35
15 - (.067)	1.930	1.020	4.86
14 - (.074)	2.142	1.127	5.37

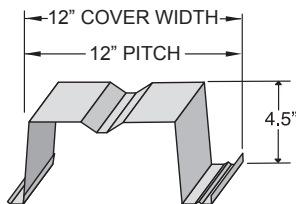
fy = 50 ksi for gages 22 through 16, and 40 ksi for gages 14 and 15  
Concrete add (in.) = 0.87



Available on request

Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)
20 - (.036)	2.754	1.043	3.29
19 - (.042)	3.345	1.239	3.84
18 - (.047)	3.853	1.404	4.29
17 - (.053)	4.462	1.601	4.83
16 - (.059)	5.099	1.798	5.37
15 - (.067)	5.718	1.973	6.00
14 - (.074)	6.346	2.184	6.63

fy = 50 ksi for gages 20 through 16, and 40 ksi for gages 14 and 15  
Concrete add (in.) = 1.00



Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)
20 - (.0358)	2.526	0.928	3.09
20HD - (.0378)	2.712	1.011	3.26
19 - (.0418)	3.090	1.173	3.61
18 - (.0474)	3.649	1.414	4.09
17 - (.0538)	4.307	1.706	4.64
16 - (.0598)	4.925	1.947	5.16
15 - (.0671)**	5.565	2.237	5.78
14 - (.0747)**	6.191	2.507	6.44

All deck fabricated from steel conforming to ASTM Specification A-653 Grade 50 having a Coating Class of G-165 in accordance with ASTM Specification A-924

\* † Design is nominal base steel thickness

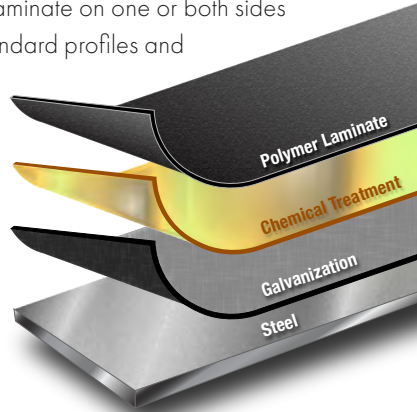
\*\* Grade 40 Steel



## Polymer-laminated deck forming systems for aggressive environments

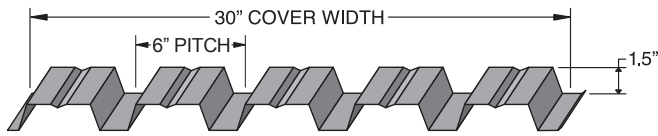
Protect your bridges from salt corrosion with Rhino-Dek®, ideal for new construction and bridge rehabilitation over brackish and salt water. Galvanized steel with a polymer laminate on one or both sides of the deck pan. Available in 4 standard profiles and numerous matching rebar profiles for design spans up to 14 feet.

- Corrosion resistant
- Abrasion resistant
- Ultraviolet resistant
- No welding required
- 124-year service life in aggressive environments

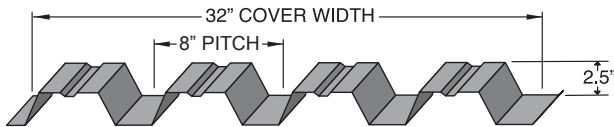


Contact the Bridge-Dek® specialists at 803-251-5165

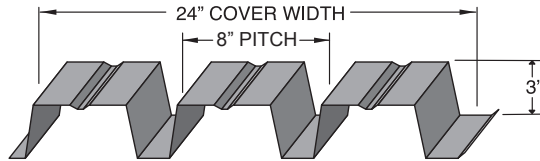
# RHINO-DEK® — OPTIMIZED FOR SPANS OVER BRACKISH AND SALT WATER



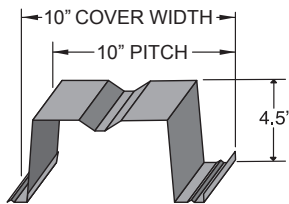
Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)	Rhino-Dek® Weight	
				Coated 1-Side	Coated 2-Sides
22 - (.030)	0.166	0.196	1.81	1.85	1.89
21 - (.033)	0.188	0.216	1.99	2.03	2.07
20 - (.036)	0.210	0.238	2.16	2.20	2.24



Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)	Rhino-Dek® Weight	
				Coated 1-Side	Coated 2-Sides
22 - (.030)	0.532	0.381	1.93	1.98	2.02
21 - (.033)	0.590	0.423	2.13	2.17	2.21
20 - (.036)	0.645	0.462	2.31	2.35	2.40

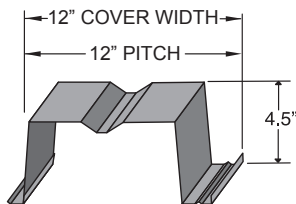


Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)	Rhino-Dek® Weight	
				Coated 1-Side	Coated 2-Sides
22 - (.030)	0.795	0.441	2.23	2.28	2.33
21 - (.033)	0.900	0.492	2.45	2.50	2.55
20 - (.036)	1.002	0.541	2.67	2.72	2.77
19 - (.042)	1.208	0.642	3.11	3.16	3.21
18 - (.047)	1.360	0.725	3.48	3.53	3.58
17 - (.053)	1.540	0.820	3.91	3.96	4.01
16 - (.059)	1.721	0.913	4.35	4.40	4.45
15 - (.067) **	1.930	1.020	4.86	4.91	4.96
14 - (.074) **	2.142	1.127	5.37	5.42	5.47



Available on request

Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)	Rhino-Dek® Weight	
				Coated 1-Side	Coated 2-Sides
20 - (.036)	2.754	1.043	3.29	3.33	3.36
19 - (.042)	3.345	1.239	3.84	3.87	3.90
18 - (.047)	3.853	1.404	4.29	4.32	4.35
17 - (.053)	4.462	1.601	4.83	4.86	4.89
16 - (.059)	5.099	1.798	5.37	5.40	5.43
15 - (.067)	5.718	1.973	6.00	6.03	6.06
14 - (.074)	6.346	2.184	6.63	6.66	6.69



Gage † Design *	Moment of Inertia (in. <sup>4</sup> )	Section Modulus (in. <sup>3</sup> )	Deck Weight (psf)	Rhino-Dek® Weight	
				Coated 1-Side	Coated 2-Sides
20 - (.0358)	2.526	0.928	3.09	3.13	3.16
20HD - (.0378)	2.712	1.011	3.26	3.29	3.32
19 - (.0418)	3.090	1.173	3.61	3.64	3.67
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17 - (.0538)	4.307	1.706	4.64	4.67	4.70
16 - (.0598)	4.925	1.947	5.16	5.19	5.22
15 - (.0671) **	5.565	2.237	5.78	5.81	5.84
14 - (.0747) **	6.191	2.507	6.44	6.47	6.50

All deck fabricated from steel conforming to ASTM Specification A-653 Grade 50 having a Coating Class of G-165 in accordance with ASTM Specification A-924

\* † Design was calculated by taking the ordered minimum thickness including coating [G165], subtracting out the coating thickness [0.0017\*1.65] and dividing by 95% in accordance with AISI Specifications

\*\* Grade 40 ksi Steel



**Your nationwide resource for the broadest range of cost-optimized,  
high-performance structural steel joist and deck solutions**

- Structural steel joists, Joist Girders and deck
- Architectural decking solutions
- Long-span composite deck slab systems
- Custom engineering and design assistance
- BIM-based steel joist and deck design
- Nationwide manufacturing and availability
- Design-Build and Integrated Project Delivery (IPD)
- AIA and PDH courses for project optimization



**Contact the Bridge-Dek® design team for assistance and technical information:  
803-251-5165**



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