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It's Our Nature. 

SAVING MONEY. SAVING LIVES.

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NUCOR STEEL MARION, INC. HIGHWAY PRODUCTS

Saving Money. Saving Lives.





SAVING MONEY. SAVING LIVES.

Safety is smart business. Start with products designed to make our highways safer, plus give customers a way to save money at the same time. These are the guiding principles behind everything we do.

We started with our patented RIB-BAK® U-channel signpost. Its stronger design has the added safety of 25% more yield strength than competitive signposts. And the cost savings of supporting larger signs with smaller posts. Not to mention they traditionally cost significantly less to purchase than other steel signposts, such as square tube.

RIB-BAK initially became the integral part of our full line of breakaway U-channel systems for small and mid-sized signs that exceed allowable crash impact standards by over 200%.

Then we expanded with RIB-BAK as the heart of our NU-CABLE barrier system that offers a unique combination of TL-3 and TL-4 crash-test proven protection, and a 50 to 75% savings over traditional W-beam and concrete barriers.

Finally, we introduced our NU-GUARD U-channel post guardrail systems that meet revised NCHRP 350 and/or MASH criteria, while cutting installation time in half and lowering the overall guardrail material costs.

Doing the right thing becomes a habit. And it's wonderfully contagious, especially when it starts with doing the safe thing for your customers. And ends with saving them money.



RIB-BAK® SIGNPOSTS. THE HEART OF NUCOR STEEL MARION, INC. HIGHWAY PRODUCTS.

A signpost that sacrifices strength and safety for a lower price is no bargain...and may be a liability.

Pound for pound, a discount post might promise what looks like savings to the untrained eye. But a stronger support means you can use smaller, more economical posts – cutting cost without sacrificing strength or safety.

Made of our tough, new-billet steel, RIB-BAK is the strongest U-channel post available, especially in the crucial load-bearing points. It has 25% more yield strength than competitive posts to withstand higher wind loads, and saves money by supporting a lot more sign per post.

Take the common 30-inch stop sign, for example. MUTCD requirements call for a sign to have a seven-foot clear height. For the sign to withstand 70-mph winds you can use a 2-pound RIB-BAK post, or you would need a heavier and more expensive competitive post.

The RIB-BAK U-channel post has a patented ribbed back design. Its contact points are flush surfaces, providing solid, more permanent sign attachment. And installation typically takes just minutes, with posts easily driven with conventional tools. RIB-BAK signposts deliver performance, strength and safety. In other words, the best value in sign supports.

Crash Tested and Accepted

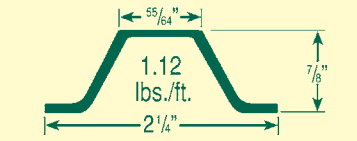
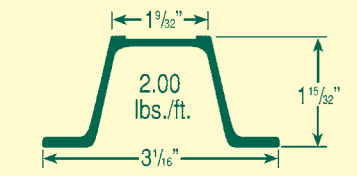
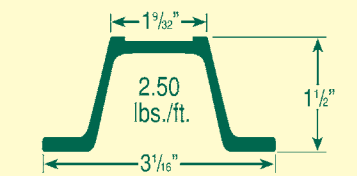
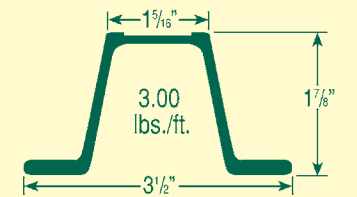
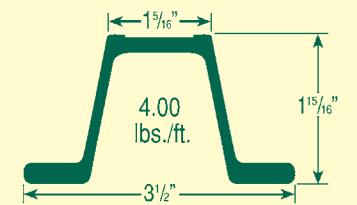
RIB-BAK U-channel signposts and breakaway systems are accepted by the FHWA (Federal Highway Administration) for small sign support applications, and also meet or exceed the NCHRP 350 criteria for occupant impact velocity.



Comparing Signposts

	RIB-BAK® U-Channel	Other U-Channels
Ingredients	U.S. new-billet steel	Foreign or domestic rail steel
Steel Properties	Consistent and strong	Inconsistent and weak – 25% less yield strength
Supports Signage on Back of Post	Yes	No – signs wobble on a rounded surface
Yield Strength	80-100 KSI	60-80 KSI
ASTM A499 Requirements	Exceeds	Meets
Post Needed to Support 30" Stop Sign in 70 m.p.h. Winds, 7' Clear Height	2 lb. Signpost	2.5 lb. Signpost

Multiple Sizes



NOTE:
3 lbs. /ft. x 3 supports –
and all 4 lbs. /ft. supports –
must use breakaway hardware
to comply with FHWA
breakaway requirements.



Electrostatically charged powder adheres to the RIB-BAK U-channel posts.

POWDER COATING AT THE PRICE OF PAINT.

Only Nucor Steel Marion, Inc. gives you the superior rust-resistant protection, durability and appearance of powder coating – at the price of paint. Called POWDER-SHELL™, it's available for all sizes of RIB-BAK in green, black, yellow, white, orange and brown (other colors by request). For the ultimate protection against the elements, RIB-BAK posts are also available in hot-dipped galvanized (ASTM A123).

NUCOR STEEL POWDER-SHELL™

Production Description.....	Smooth Polyester Powder Coat
Product Characteristics	
Specific Gravity.....	1.54 +/- .05
Storage Temperature.....	< 80° F
Particle Distribution.....	+44 Microns (325 Mesh) 28-34%
Film Thickness.....	1.8 to 2.5 mils
Cure Schedule.....	10 minutes @ 400° F
Gloss.....	ASTM D523 75-85%
Pencil Hardness.....	ASTM D3363 H-2H
Flexibility.....	ASTM D522 1/8 inch
Adhesion.....	ASTM D3359 5B
Direct Impact.....	ASTM D2794 160 in/lbs @ 2.0 mils
Reverse Impact.....	ASTM D2794 160 in/lbs @ 2.0 mils

POWDER-SHELL.

Our powder coated post won't have the missed spots or areas of thin coverage that so often occur on painted posts. Plus, the powder coating lasts longer than paint.



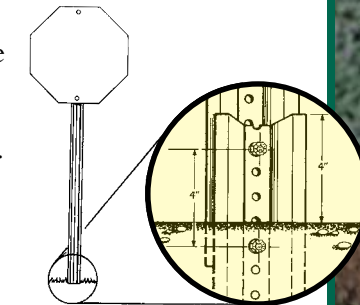
LAP-SPLICE™ THE RIB-BAK BREAKAWAY SYSTEM MADE EASY.

The simplest and easiest to use breakaway system. The LAP-SPLICE is a ground-mounted, bolted-based breakaway system for any size SP-80 RIB-BAK U-channel. And it costs remarkably less than competitive breakaway systems.

Designed for Safety and Economy

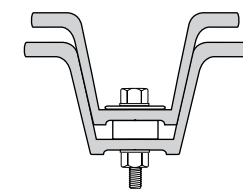
The system utilizes a short RIB-BAK base or ground post, so it can easily and quickly be driven into even the hardest clay soils from ground level with manual or power tools, in just minutes. Nesting and bolting the top post to the bottom post takes just minutes, too – so installation crews spend less time by the side of the road, reducing their exposure to traffic-related injury.

The economy of the LAP-SPLICE system is by design. Just two special bolts and a bar spacer (with threaded holes) are needed to join the top post to the base post.



BAR SPACER SIZE CHART

Post Size (lbs./ft.)	Bar Color	Bar Size
2 & 2.5	Silver	3/8" x 3/4" x 5"
3 & 4	Gold	1/2" x 3/4" x 5"



The LAP-SPLICE system securely nests RIB-BAK U-channel together, forming a union as strong as the posts themselves.





SLIP-SAFE™ THE 360° BREAKAWAY SYSTEM FOR HIGH-IMPACT AREAS.

This durable, safe and reusable breakaway system is the ideal solution for small sign supports in high-impact areas. SLIP-SAFE is designed to be installed – and reinstalled – quickly and cost effectively. It can handle sign panels up to 42 sq. ft. using three 4 lbs./ft. RIB-BAK posts.

Simple Slip-Base System

The system utilizes a short RIB-BAK base or ground post, so it can easily and quickly be driven into even the hardest clay soils from ground level in just minutes. Specially designed castings are bolted to the top and bottom posts. These assemblies are bolted together with U-washers, with a keeper plate in between. All assembly uses basic hand or power tools.

Exceptional Driver Safety

SLIP-SAFE exceeds crash impact standards by more than 200 percent. NCHRP criteria for occupant impact velocity has established a maximum of five meters per second, with three meters per second preferred. In field tests, the SLIP-SAFE cut the preferred occupant impact velocity in half.

Reusability

By design, virtually the entire system is reusable after it's hit. This reduces reinstallation time, and saves money by reducing the cost of purchasing new parts and hardware.



SLIP-SAFE SUPREME™ 360° BREAKAWAY SYSTEM FOR MID-SIZE SIGN SUPPORTS.

Used to be that installing mid-size signs were expensive multi-day projects – dig holes, set posts, pour concrete, use crane to erect posts – then put up the signs some other day. No longer.

Cost Effective

The SLIP-SAFE SUPREME can be installed – and reinstalled – quickly, easily and cost effectively because it does not require concrete foundations in strong soil conditions. Its base post is a direct-drive unit composed of two RIB-BAKs bolted together, requiring only conventional power tools for installation. Specially designed castings are bolted to the top and bottom posts. These assemblies are bolted together with U-washers, with a keeper plate in between. All assembly uses basic hand or power tools.

SLIP-SAFE SUPREME saves you time and money in the setup. And in most cases, the entire system is reusable after it's hit, including the base post, attachment hardware, casting and top post. Stub repair is usually unnecessary.

Exceptional Driver Safety

SLIP-SAFE SUPREME exceeds crash impact standards by more than 200 percent. NCHRP criteria for occupant impact velocity has established a maximum of five meters per second, with three meters per second preferred. In field tests, the SLIP-SAFE SUPREME cut the preferred occupant impact velocity in half.





BEND-BAK® BENDABLE LOW-CARBON STEEL PERMANENT DELINEATORS.

FHWA-accepted BEND-BAK mild-carbon steel delineators bend without breaking, combining the strength and durability of steel with the flexibility of plastic and fiberglass.

Flexible and Strong

BEND-BAK delineators are strong enough to be easily and economically driven directly into the ground without bending. Yet they are flexible enough to be straightened manually if they are run over.

Cost Effective

Not only do BEND-BAKs reduce installation and repair costs, they cost three to four times less than plastic or fiberglass delineators. They are available in a variety of lengths to meet your needs, coated with POWDER-SHELL.



BEND-BAK
straightening tool available.

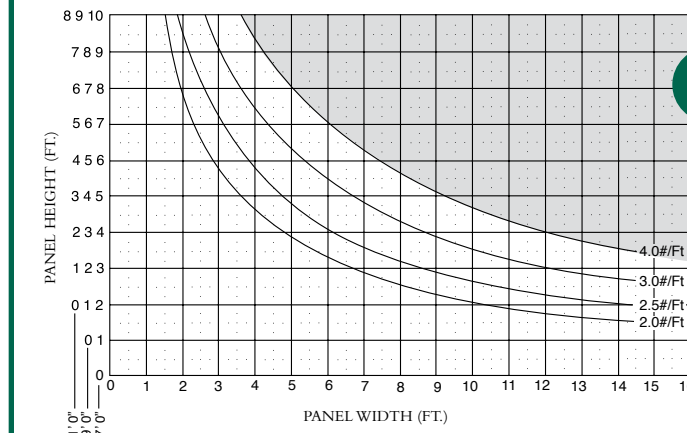
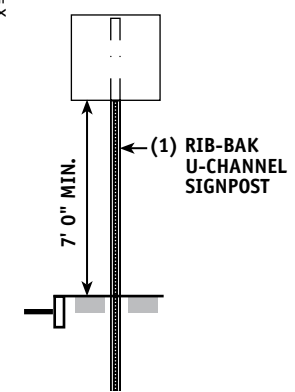
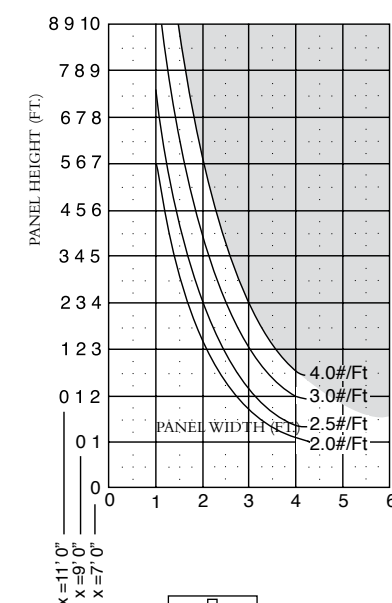


FIELD INSTRUCTION MANUAL. EASILY FIND THE RIGHT POST FOR THE SIZE OF YOUR SIGN.

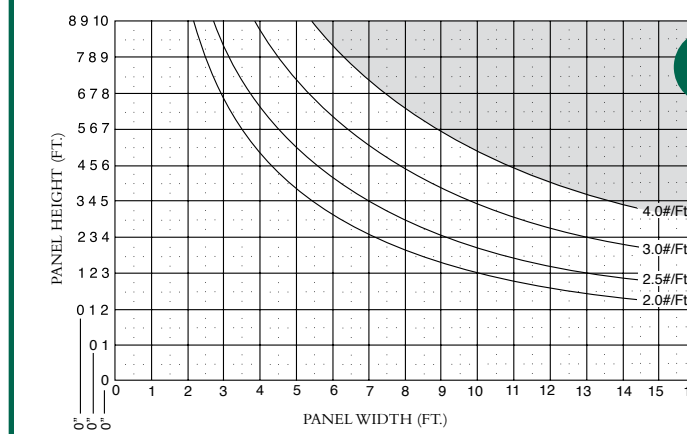
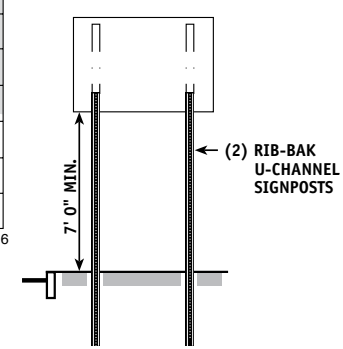
Meet MUTCD requirements with smaller U-channel signposts than competitors require. Printed on waterproof paper, this special booklet is available free of charge to aid in RIB-BAK post size-to-sign selection and installation of LAP-SPLICE and SLIP-SAFE.

70 MPH WIND LOAD CHARTS

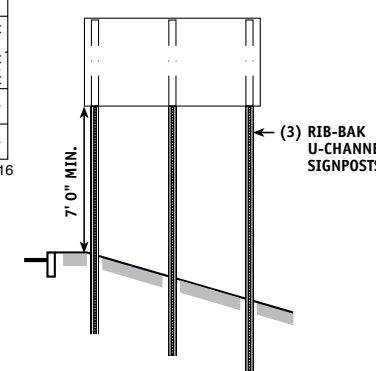
1 SINGLE POST APPLICATIONS

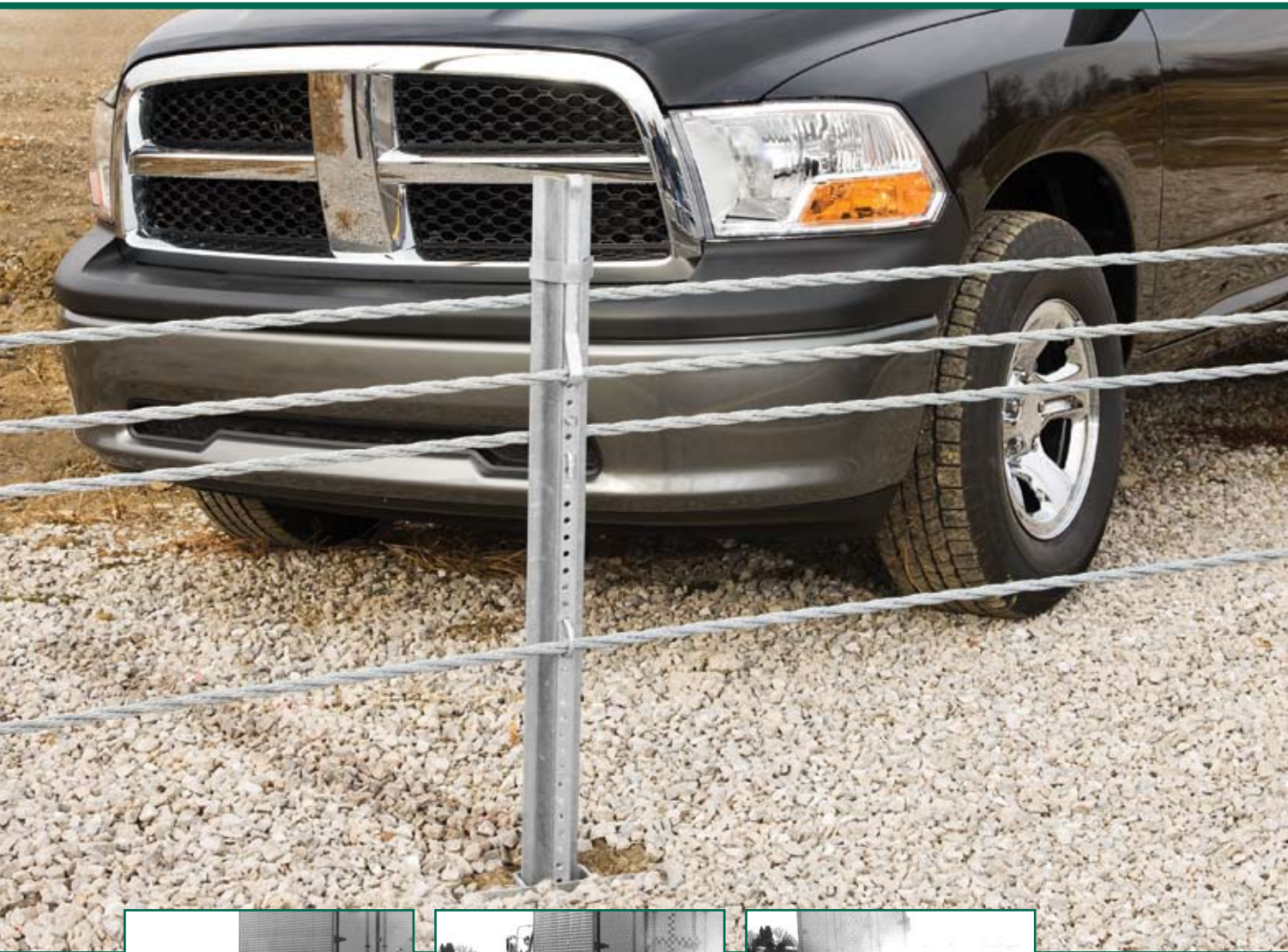


2 DOUBLE POST APPLICATIONS



3 TRIPLE POST APPLICATIONS





TL-4 NU-CABLE system.

Test Level 4 "box truck" crash test of NU-CABLE TL-4 design.

NU-CABLE™ PROVEN SAFETY BARRIER REDUCES COSTS UP TO 75%.

Our NU-CABLE barrier systems offer a unique combination of TL-3 and TL-4 crash-test proven protection, while costing 50 to 75% less than traditional W-beam and concrete barriers. Plus they're more economical to install, maintain and repair. That's saving lives for less.

Crash Tested and NCHRP 350 Compliant

The NU-CABLE system is available in 3-cable (TL-3) or 4-cable (TL-3 or TL-4)) designs. NU-CABLE TL-3 has passed the "pickup truck" crash test, and NU-CABLE TL-4 has passed the "box truck" crash test.

The systems, which comply with NCHRP 350, utilize strong yet economical 4-lb. or 5-lb. RIB-BAK® U-channel breakaway steel posts, which can be galvanized or powder coated for longer life. Pre-stretched 3/4" cables are attached to the posts with a unique system of locking hook bolts, cable hangers and clips that absorb energy during crashes. The systems are FHWA-accepted and are anchored at both ends into FHWA-accepted end treatments.

Easy To Install, Easy to Maintain

The NU-CABLE barrier systems can be installed in median and roadside configurations, with posts economically installed in direct-driven line post, concrete socketed or direct-driven steel socketed foundations. Not only is the system easy to install, it's also easy to maintain and repair, resulting in continued savings beyond its lower installation costs. Crews prefer the NU-CABLE system because after it has been hit, it can often be repaired within 30 minutes. Furthermore, NU-CABLE is visually appealing and does not block driver visibility like a concrete or W-beam system.



NU-CABLE TL-4.

NU-CABLE TL-3

	NU-CABLE™ TL-3	NU-CABLE™ TL-3 (TL-4 Design)	NU-CABLE™ TL-4
RIB-BAK® U-Channel	4 or 5 lb./ft. Nucor Grade SP-80	4 lb./ft. Nucor Grade SP-80	4 lb./ft. Nucor Grade SP-80
Top Cable Height	29 1/2"	41 1/2"	35"
Number of Cables	3 or 4	4	4
NCHRP 350 Tested	TL-3 Compliant	TL-3 Compliant	TL-4 Compliant
Foundation Type	Direct Drive, Concrete Socketed or Direct Drive Steel Socket	Concrete Socketed or Direct Drive Steel Socket	Concrete Socketed or Direct Drive Steel Socket
Slopes	Up to 6:1	4:1	Up to 6:1



NU-GUARD™-31

NU-GUARD™-27



NU-GUARD™-31. A REVOLUTIONARY W-BEAM GUARDRAIL SYSTEM.

NU-GUARD™-31 is a W-beam guardrail post system that combines NCHRP 350 (TL-3 and TL-4) and MASH (TL-3) compliance with a design that makes installation and repairs simple, fast and inexpensive.

Innovative Energy Dissipation

Specially designed 5 lb. /ft. RIB-BAK® U-channel steel posts allow a standard W-beam guardrail to rise during impact with the vehicle, dissipating energy in an innovative way, resulting in a smoother, more predictable redirection. The posts are available galvanized or powder coated to prohibit rust and promote longer life.

Crash Tested and NCHRP 350 (TL-3 and TL-4) and MASH Compliant

The FHWA-accepted NU-GUARD-31 system can be used in strong post applications along roads or in medians.

No Offset Blocks or Thrie-Beam Needed to Meet TL-4

NU-GUARD-31 eliminates the need for offset blocks or heavy, expensive thrie-beam guardrail. Standard bolts with a specially designed washer are all you need to attach a standard W-beam guardrail to the uniquely designed posts.

Easiest, Fastest and Most Economical to Install

The revolutionary system is much faster, easier and less costly to install than traditional wood or I-beam post systems. The RIB-BAK U-channel steel posts are quickly and easily direct-driven into the ground or through asphalt to the proper depth. With no holes to auger, total installation time is dramatically faster than with standard post systems.



Test Level 3 crash test of NU-GUARD-31 design.

NU-GUARD™-31	
Guardrail	Standard W-beam (AASHTO M-180 Class A or B, Type II)
W-Beam Height	31"
RIB-BAK® U-Channel	5 lb./ft. 6'6" Nucor Grade SP-80
Offset Blocks	Not Required
NCHRP 350 Tested	TL-3 & TL-4 Compliant
MASH Tested	MASH TL-3 Compliant

NU-GUARD™-27. STANDARD W-BEAM GUARDRAIL SYSTEM.

Now standard W-beam guardrail with offset blocks can be installed in a fraction of the typical time needed, thanks to specially designed RIB-BAK® U-channel posts from Nucor Steel Marion, Inc.

Easier, Faster and More Economical to Install

The NU-GUARD™-27 strong post guardrail system is easier, faster and more economical to install than standard wood or I-beam post guardrail systems. The 5 lb. /ft. RIB-BAK® U-channel steel posts, six-and-a-half feet in length, are quickly and easily direct-driven into the ground or through asphalt to the proper depth. Standard guardrail hardware is used to attach the guardrail and offset block to the U-channel post.

The NU-GUARD™-27 system can be used to repair sections within an existing run of wood or I-beam posts. With no holes to auger, total installation time is dramatically faster.

Crash Tested and NCHRP 350 Compliant

NU-GUARD™-27 has been crash-tested and meets NCHRP 350 TL-3 criteria, and is FHWA-accepted for roadside applications (FHWA Acceptance Letter B-162). The system uses any standard W-beam (AASHTO M-180, Class A or B, Type II) and requires the use of offset blocks. The posts are available galvanized or powder coated to prohibit rust and promote longer life, and are designed for use in strong post applications.



NU-GUARD™-27	
Guardrail	Standard W-beam (AASHTO M-180 Class A or B, Type II)
W-Beam Height	27" - 31"
RIB-BAK® U-Channel	5 lb./ft. 6'6" Nucor Grade SP-80
Offset Blocks	Required
NCHRP 350 Tested	TL-3 Compliant



Test Level 3 crash test of NU-GUARD-27 design.