

MDS® TL4

Minimum Deflection Systems

Approvals

FHWA NCHRP 350

MASH-08

EN1317 H2





Dangerous Turns



Road Construction



Highway Medians

MDS® BARRIERS

TL4

Run-off-road crashes are one of the most common types of crashes in urban and highway environments. Installing MDS high performance safety barriers help create safer roadside environments by preventing errant vehicles from leaving the roadway and instead re-directing the vehicle back into the flow of traffic.

MDS MASH Approved Test Level 4 Safety Barriers use a structured modular system that is easy to deploy and install.

ADVANTAGES

- Minimise the risk to errant vehicle occupants, vulnerable road users (motorcyclists, cyclists, pedestrians) and road workers
- Control impacting vehicle behaviour and reduce hazards created by impact
- Reduce impact transmission forces to bridge decks with *Progressive SRS

MDS® TL4 BARRIERS

MDS® Steel Barriers are a high performance vehicle restraint system. Lightweight modular design facilitates assembly for both new and existing bridge constructions, rehabilitation projects and highway medians.

PROVEN MDS® TL4 PERFORMANCE

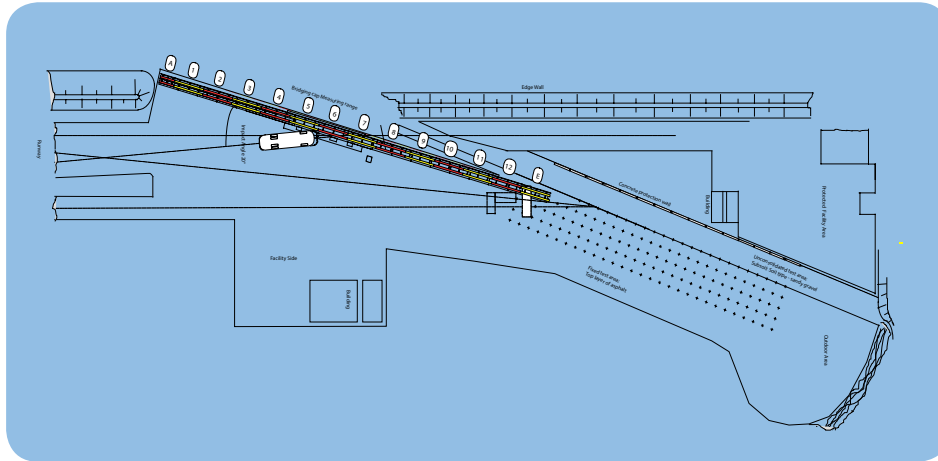
MDS® BARRIERS have been tested to meet the highest performance standards in the world, passing both the American Standard NCHRP Report 350 and MASH-08 Test Level 4 including European Standard EN1317 Test Level H2.

ALTERNATIVE TO CONCRETE

MDS® TL4 barriers easily relocate during deck resurfacing while maintaining TL4 high impact minimal deflection standards. MDS® Barriers incorporate a unique base attachment system called Progressive SRS® (Stress Reduction System) that dissipates and absorbs vehicle impact forces while reducing the moment transmission forces into the anchored surface.

APPLICATIONS

- Bridges
- Highway Medians
- Work Zones
- Edge of Roadways
- Bridge Parapets



FEATURES

- Highest containment in a portable TL4 system
- Modular 20 & 10 ft sections and custom lengths
- Lightweight only 54 Lbs per foot
- Progressive SRS® technology
- Anchoring depth is only 5.5 inches deep every 10 feet
- Variable Length Barriers for expansion joints
- Eliminates 90% of concrete barrier dead weight
- 40 > 100 year *life cycle in C1-VH environments
- Adapts to most all industry standard end treatments
- Easily remove and replace damaged sections
- Pre-designed for noise and site wall integration



PROGRESSIVE SRS

Unlike concrete barriers, the MDS® Barrier is designed with a “SRS” Stress Reduction System that absorbs a vehicle impact while simultaneously reducing the moment transmission forces into its anchored surface. Standard steel and concrete barriers generally rely on the “stiffness” or “torsional rigidity” which is logical, but the stiffness and hardness of the barrier also transmits impact forces back to the vehicle and into the anchored surface creating excessive pulling forces on the bridge deck that can create severe or hidden damage.

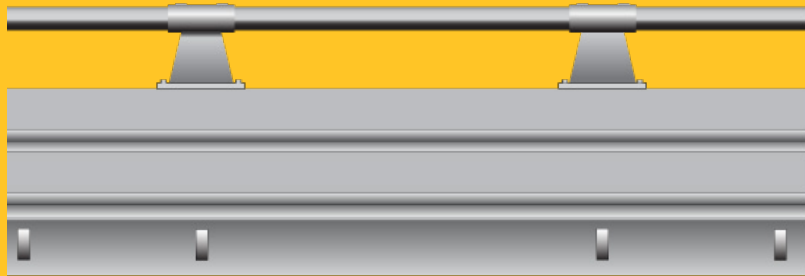
MDS Barriers are designed to reduce moment forces allowing bridge decks to be designed with less reinforcement materials saving in material costs and labor.

MDS TL4 Barrier Lateral Force Bending Moment			
FORCE TYPE	Ft-Lbs	Ft-Lbs	kN/m
VEHICLE	Car	Bus	Bus
MOMENT	1,041	1,415	57.2
HORIZONTAL FORCE			57.1
VERTICAL FORCE			46.8
WEIGHT			
Lbs per foot	Kgs per meter		
54	81		

MDS® TL4

H2-SERIES

High Performance MDS® STEEL BARRIER SYSTEMS
Minimal Deflection Systems



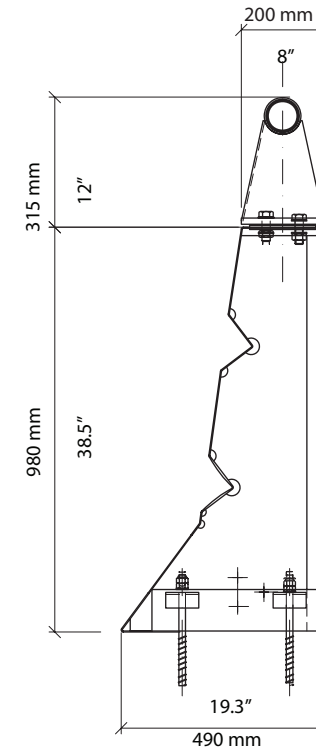
MDS® TL4 H2-Series

Minimum TL4 Deflection System Specifications		
Type	Inches	Millimeters
Height	50.5	1295 mm
Base unit height	38.5	980 mm
Base width	19.3	490 mm
Weight	54 Lbs/ft	80 kg /m
Materials	Steel - Hot dipped galvanized	
Anchoring Distance	2 Anchors every 3 meters (10 feet)	
Anchoring depth	130 mm (5.5 inches)	
Material Options	Stainless Steel	
	Duplex coatings (Galvanized & Paint Coated)	
Approvals	FHWA MASH Test Level TL4, NCHRP Report 350	
FHWA Ref	MDS-4	
Ref EN1317	Sergard MDS H2	

*Deflection at Top of Barrier					
Test No.	Speed km/h	Vehicle weight kg	Impact angle	Max Dynamic Deflection	Max Permanent Deflection
TB11	102.9	924	20	0.16	0.12
TB51	71.6	13120	20	0.50	0.32

*Base of barrier remains in anchored position

SPECIFICATIONS



MDS® TL4 H2-Series

TRANSITIONS

TL4
MDS® BARRIERS
Minimum Deflection Systems

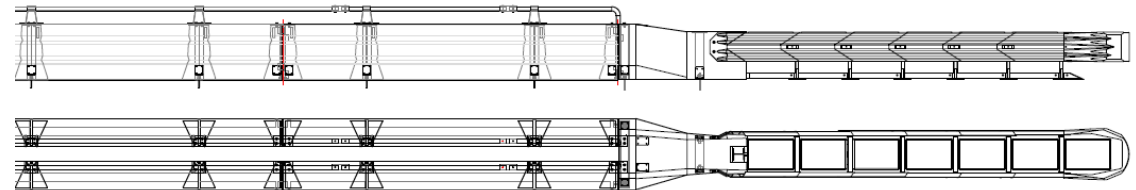
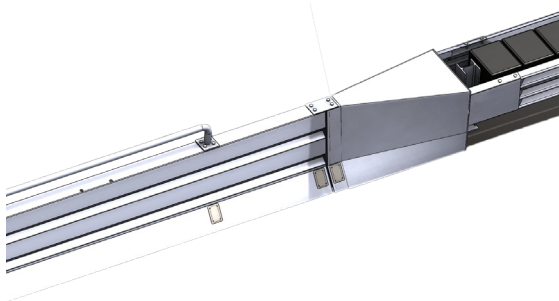
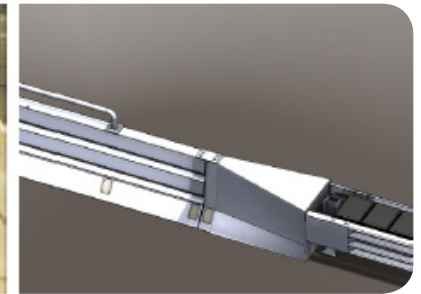
TRANSITIONS

MDS® BARRIERS transition into all guardrails, concrete barriers and end treatments for seamless integration and road continuity. MDS® Barriers offer a modern progressive design while maintaining the highest level of protection in fast deploying modular barrier system.



ATTENUATORS

When the MDS® TL4 barrier is used as a stand alone barrier such as in a work zone, it must have a crash cushion attached to the end to ensure that adequate protection is provided for both approach and departure ends. The QuadGuard cushions can be used with the MDS® TL4 depending on the intended use and also the design speed for the location. The QuadGuard CZ accommodates speeds from 25 to 62 mph. (40 to 100 km/h)



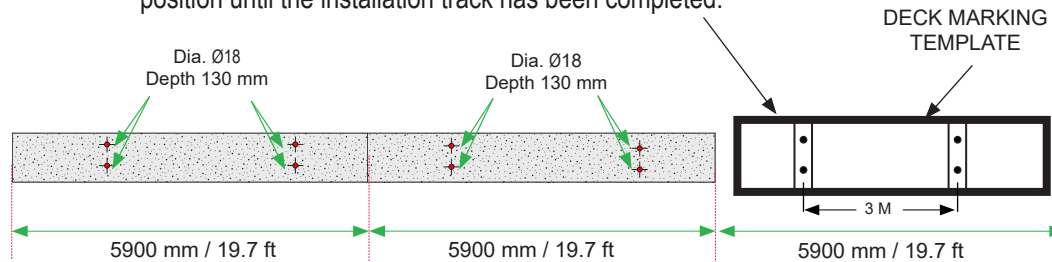
INSTALLATION INTERNAL QUICK VIEW

MDS Barriers

Are an easy to install modular barrier system with the choice of internal anchoring or external anchoring

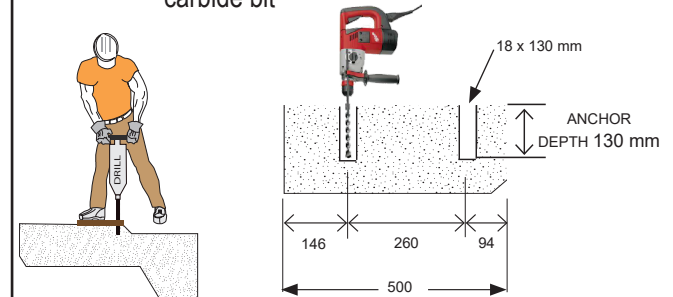
STEP 1

Place the template on the deck and drill two Ø16 mm pilot holes. Move template to the next position until the installation track has been completed.



STEP 2

Finish drilling with Ø18 x 130 mm deep holes with carbide bit



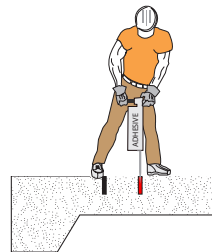
STEP 3

Blow out holes with compressed air.



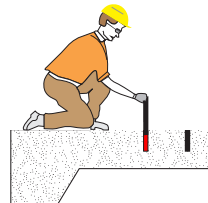
STEP 4

Inject resin in anchor holes.



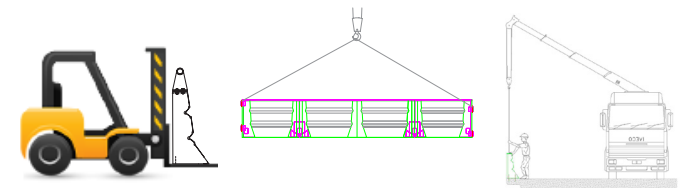
STEP 5

Insert two Ø16 x 290 mm threaded rods.



STEP 6

Lift and place all barrier sections over the protruding anchor rods.



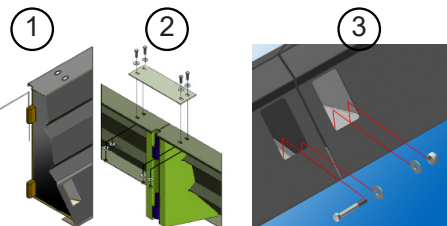
STEP 6

Continued.



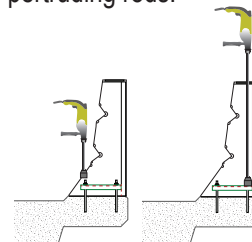
STEP 7

1. Insert connecting pin
2. Mount splice plate
3. Join barrier sections



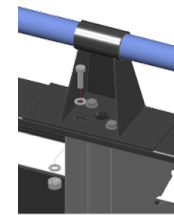
STEP 8

Using access ports, tighten barrier to protruding rods.



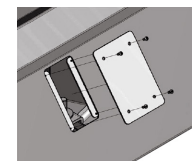
STEP 9

Mount top rail post and tube.



STEP 10

Ensure all bolts are tight and access covers in place.



Installation Complete

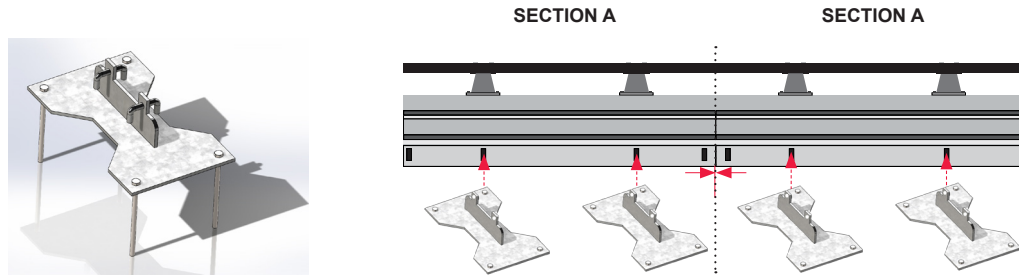
INSTALLATION EXTERNAL

QUICK VIEW

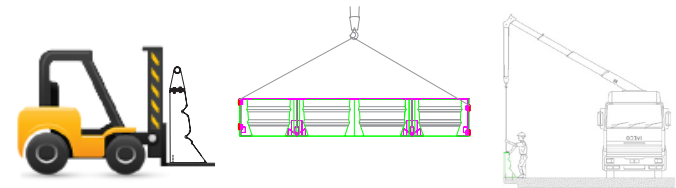
MDS Barriers

Are an easy to install modular barrier system with the choice of internal anchoring or external anchoring

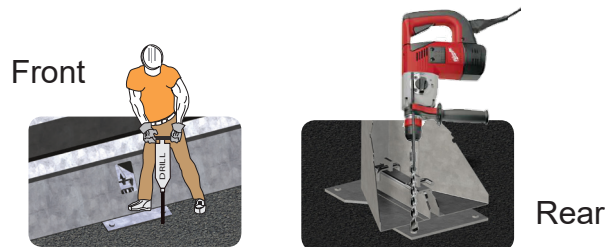
STEP 1 Place external anchor plate under barrier and lock in through front access port holes.



STEP 2 Lift and place all barrier sections according to project layout and design.



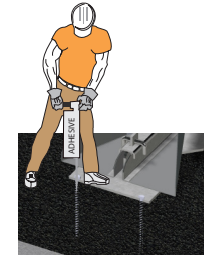
STEP 3 Once barrier is in place, drill four Ø18 mm x 130 mm deep holes through the quick release anchor plate.



STEP 4 Blow out holes with compressed air.



STEP 5 Inject resin in anchor holes.

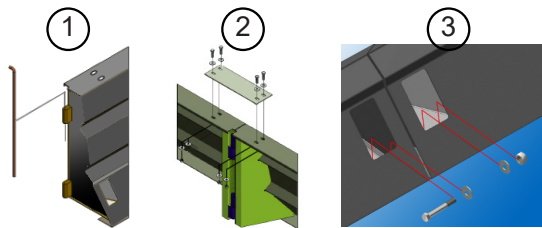


STEP 6 Insert two 16 mm x 165 mm threaded rods.

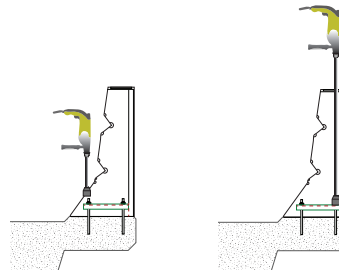


STEP 7

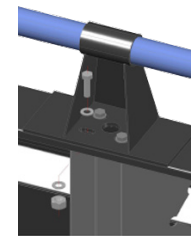
1. Insert connecting pin
2. Mount splice plate
3. Join barrier sections



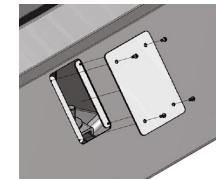
STEP 8 Using access ports, tighten barrier to protruding rods.



STEP 9 Mount top rail post and tube.



STEP 10 Ensure all bolts are tight and access covers in place.



Installation Complete



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