

YELLOW JACKET[®]

FRICTION REDUCTION PILE SLEEVE



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WHAT IS A YELLOW JACKET®?

A prefabricated pile sleeve utilized to reduce the negative skin friction on piles embedded behind MSE bridge abutments. The Yellow Jacket® provides a slip plane between the settling abutment select backfill and the driven bridge abutment piles, resulting in a significant reduction of the downdrag imposed on the piles.



THE PROBLEM: DOWNDRAG

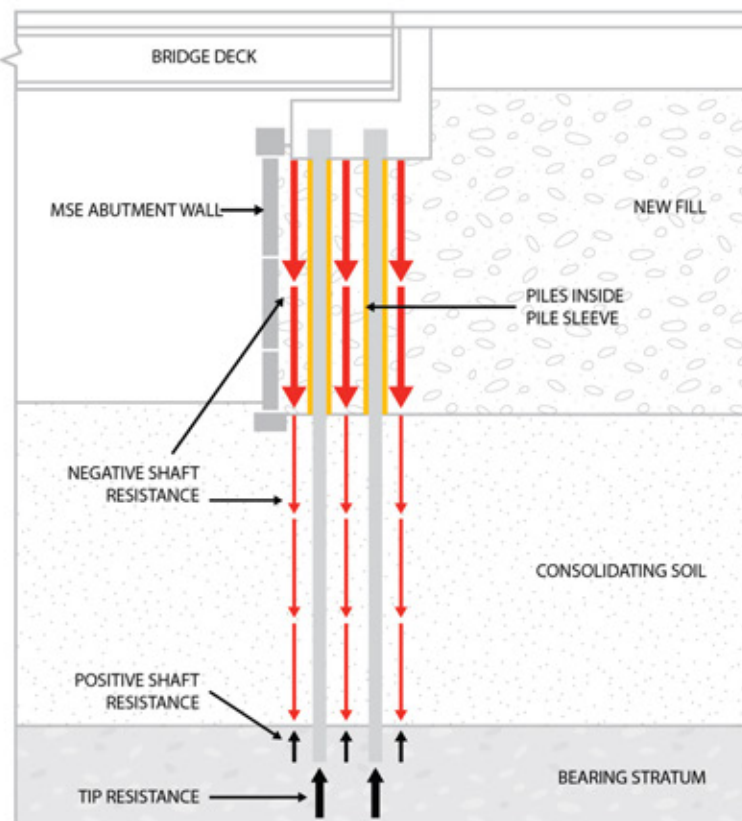
WHAT IS DOWNDRAG?

Settlement of soil after piles are driven applies additional loads to piles. The additional load is caused by the friction or adhesion between the pile and the downward moving soil.

Downdrag may also be referred to as:

- ❖ Negative skin friction
- ❖ Negative shaft resistance
- ❖ Dragload

Downdrag load on a pile is the sum of the negative shaft resistance along the length of the pile where the soil is moving downward relative to the pile.



THE SOLUTIONS

METHOD

1 PLASTIC PIPE & SAND PILE CAN

2 CORRUGATED PIPE & SAND PILE CAN

3 BITUMINOUS COATING

EXAMPLE



PROS

- ❖ Readily available
- ❖ Common construction materials

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- ❖ History of use

CONS

- ❖ Time Intensive
- ❖ Labor Intensive – requires coordination of multiple laborers
- ❖ Logistics issues, significant transport costs
- ❖ Requires sizable lay down area
- ❖ Installation requires use of Construction Equipment to hoist
- ❖ Safety concerns when unloading & hoisting over head

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- ❖ Labor Intensive
- ❖ Environmental Concerns
- ❖ Health concerns (Safety)
- ❖ Requires specialty equipment & protective clothing
- ❖ Cure Time
- ❖ Material susceptible to leaching during heat exposure
- ❖ Coating can crack and spall off the pile during handling & Driving
- ❖ Not all bitumen coatings are made equal

COST *

\$42.50 / LF

\$53.50 / LF

\$25.00 / LF

* Cost estimates are average costs as of the date of publication, estimates include material, equipment, mobilization, and average labor costs.

4 YELLOW JACKET®



- ❖ Less expensive than traditional methods
- ❖ Quick installation results in significant reduction in construction time
- ❖ No construction equipment required
- ❖ No time needed to mobilize construction equipment
- ❖ No disposal necessary – no waste
- ❖ Made in USA
- ❖ Safe

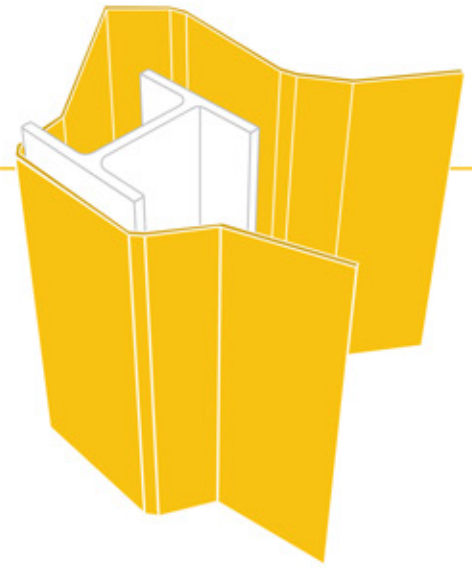
< \$10.00 / LF

SAMPLE BRIDGE PROJECT

# of Piles	20
LF of Pile exposed to new fill	25'
Total LF	500'

Method	Total Cost	YJ Savings	%Savings
Plastic Pipe & Sand Pile Can	\$21,250	\$16,250	76%
Corrugated Pipe & Sand Pile Can	\$26,750	\$21,750	81%
Bitumen Coating	\$12,500	\$7,500	60%
Yellow Jacket®	< \$5,000		

THE RIGHT SOLUTION

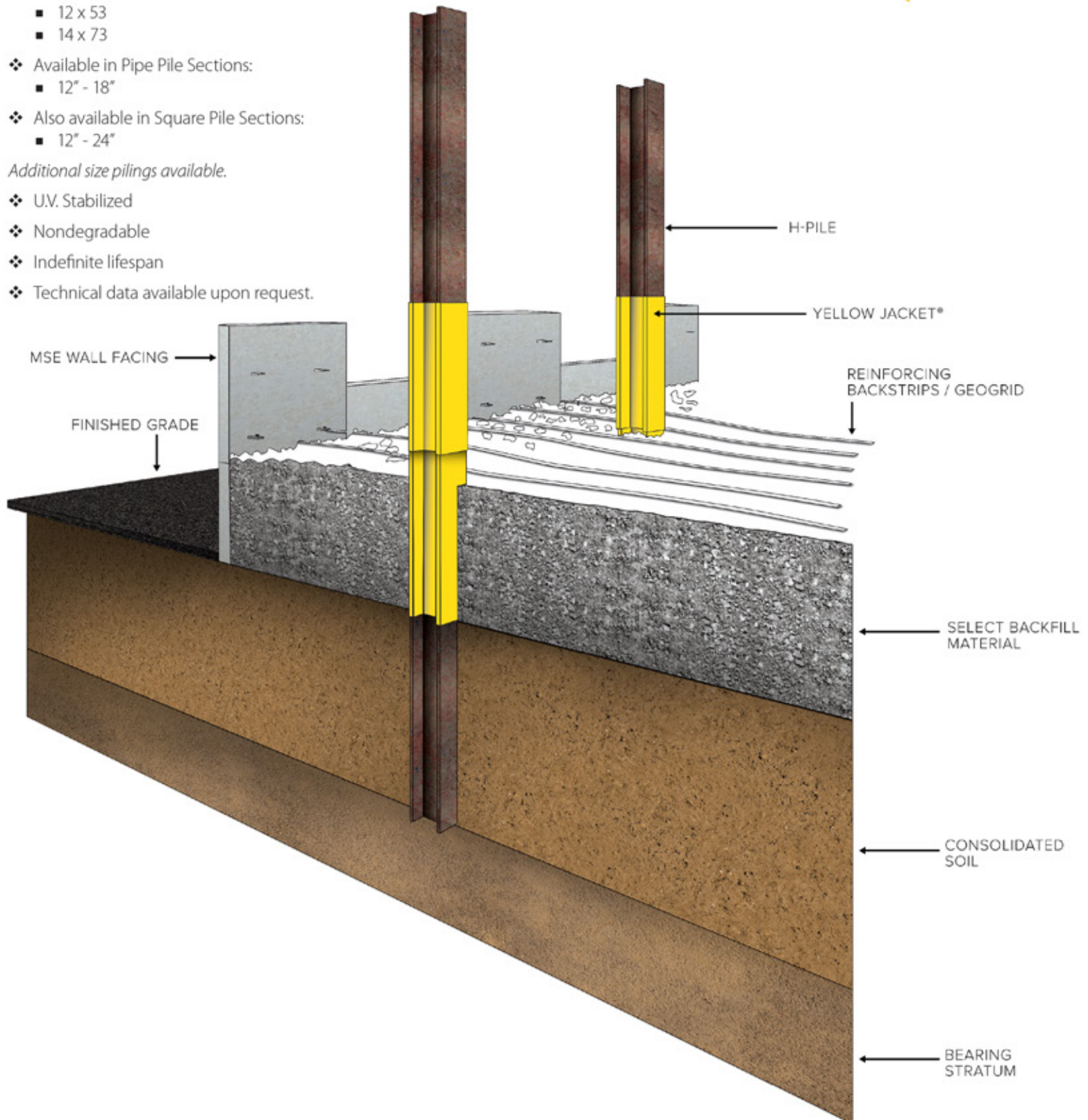


PRODUCT DETAILS

- ❖ Yellow Jacket® is a preformed thermosplastic extrusion that is infused with a proprietary lubricant during the thermoset manufacturing process.
- ❖ Sheets cut and fabricated to accommodate any specific pile group.
- ❖ Readily available in common H-Pile Sections:
 - 10 x 42
 - 12 x 53
 - 14 x 73
- ❖ Available in Pipe Pile Sections:
 - 12" - 18"
- ❖ Also available in Square Pile Sections:
 - 12" - 24"

Additional size pilings available.

- ❖ U.V. Stabilized
- ❖ Nondegradable
- ❖ Indefinite lifespan
- ❖ Technical data available upon request.



ADVANTAGES

- ❖ Substantial cost savings vs. other methods
- ❖ Fast Installation
- ❖ Minimal installation costs
- ❖ Environmentally Friendly
- ❖ Durable, easily stored, lightweight, waterproof, highly resistant to corrosion and chemicals common to construction
- ❖ Provides an excellent slip plane between the earth and piling
- ❖ Simple and safe solution for reducing downdrag

CONSTRUCTION BENEFITS

- ❖ Eliminates design problems associated with adjacent piling too close for conventional cans
- ❖ Easily and quickly installed in seconds increasing job productivity
- ❖ Rapid assembly combined with low labor and "NO" equipment requirements result in project cost savings
- ❖ No mess, no hazardous exposure to workforce and no concerns maintaining proper mil thickness requirements as with Bitumen coatings

THE COMPANY WE KEEP





U.S. Patent # 9,908,086

Manufactured by:

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Made with recycled plastics.