

VDOT NCHRP 350 Approved Products List

ANY MODIFICATION OF MATERIAL OR CONFIGURATION OF ANY VDOT APPROVED PRODUCT OR CHANGE IN THE MANUFACTURER'S NAME AND ADDRESS MUST BE CONVEYED TO VDOT IMMEDIATELY. FAILURE TO DO SO CAN RESULT IN REMOVAL FROM THE NCHRP 350 APPROVAL LIST. VDOT RESERVES THE RIGHT TO AND AT ANY TIME REMOVE A PRODUCT FROM THE APPROVED LIST AFTER ANY DISCLOSED CHANGES ARE REVIEWED.

Changes are shaded.

IMPACT ATTENUATOR (NCHRP 350 Approved)

Note that a project specific sheet will be required for each proposed location. For details please contact the Standards Section (Central Office L&D).

TL-1, 30 MPH Max.

TL-2, <40 MPH Max.

TL-3, ≥40 MPH

Note: CZ refers to Construction Zone

Type I = Re-Directive Impact Attenuator

Type II = Non Re-Directive Impact Attenuator

Type III = Non Re-Directive Impact Attenuator (Water Filled)

TYPE I (RE-DIRECTIVE LOW-MAINTENANCE)

WORK AREA PROTECTION CORP.	TL-2 SCI-70GM	Low Maintenance Impact Attenuator
	TL-3 SCI-100GM	Low Maintenance Impact Attenuator
ENERGY ABSORPTION SYSTEMS, INC.	TL-2 QUADGUARD ELITE (5 BAY)	Low Maintenance Impact Attenuator
	TL-3 QUADGUARD ELITE (8 BAY)	Low Maintenance Impact Attenuator
	TL-3 REACT 350	Low Maintenance Impact Attenuator (CZ or Permanent)
TRAFFIX DEVICES, INC.	TL-3 COMPRESSOR	Low Maintenance Impact Attenuator

TYPE I (RE-DIRECTIVE)

ENERGY ABSORPTION SYSTEMS, INC.	TL-2 & TL-3 QUADGUARD	Reusable Impact Attenuator (CZ or Permanent)
	TL-3 QUADGUARD-WIDE	Reusable Impact Attenuator (Permanent)
	TL-2 & TL-3 QUADGUARD II	Reusable Impact Attenuator (CZ or Permanent)
	TL-3 QUADGUARD-WIDE II	Reusable Impact Attenuator (Permanent)
TRINITY INDUSTRIES	TL-3 ADIEM	Sacrificial Lightweight Concrete Impact Attenuator (For use in CZ only)
	TL-2 & TL-3 TRACC	Reusable Impact Attenuator (CZ or Permanent)
	TL-3 FISTRACC	Reusable Impact Attenuator (CZ or Permanent)
	TI-3 WIDETRACC	Reusable Impact Attenuator (CZ or Permanent)
	TL-2 SHORTRACC	Reusable Impact Attenuator (CZ or Permanent)
LINDSAY TRANSPORTATION SOLUTIONS	TL-2 TAU-II (4 bay)	Reusable Impact Attenuator (CZ or Permanent)
	TL-3 TAU-II (8 bay)	Reusable Impact Attenuator (CZ or Permanent)

TYPE II (NON RE-DIRECTIVE)*
SAND BARRELS

*** NOT FOR USE IN LOCATIONS WHERE HIGH-SPEED, HIGH ANGLE IMPACTS ARE LIKELY. REQUIRES 25' WIDE x 75' LONG CLEAR AREA BEHIND HAZARD.**

<p align="center">ENERGY ABSORPTION SYSTEMS, INC.</p>	<p>TL-1 & TL-2 NEAT Non-Re-directive, Guards Pre-cast Traffic Barrier Service Concrete and QMB (CZ only) TL-1, TL-2 & TL-3 FITCH UNIVERSAL MODULE Sand Module (CZ or Permanent) TL-3 ENERGITE III SYSTEM Sand Module (CZ or permanent)</p>
<p align="center">PLASTIC SAFETY SYSTEMS, INC.</p>	<p>TL-3 CRASHGARD SYSTEM Sand Module (CZ or permanent)</p>
<p align="center">TRAFFIX DEVICES, INC.</p>	<p>TL-1, TL-2 & TL-3 BIG SANDY Sand Module (CZ or Permanent)</p>

TYPE III (NON RE-DIRECTIVE)*
WATER FILLED (CZ ONLY)

*** RESTRICTED TO LOCATIONS WHERE POSTED SPEED IS 50 MPH OR LESS. RESTRICTED TO LOCATIONS WHERE TRAFFIC IS TWO LANES OR LESS IN RUN-ON AND RUN-OFF CONDITIONS. REQUIRES A PHYSICALLY STAKED OFF CLEAR AREA AS DEPICTED ON THE PROJECT SPECIFIC SHEET THAT SHALL BE 25' WIDE AND 75' LONG.**

<p align="center">ENERGY ABSORPTION SYSTEMS, INC.</p>	<p>TL-3 ACZ-350 (CZ only)</p>
<p align="center">LINDSAY TRANSPORTATION SOLUTIONS</p>	<p>TL-3 ABSORB 350 (CZ only)</p>
<p align="center">TRAFFIX DEVICES, INC.</p>	<p>TL-3 SLED (CZ only)</p>

TERMINALS
(NCHRP 350 Approved)

ROAD SYSTEMS, INC.	TL-3 FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) 37'-6" with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 FLEAT Standard Post (FLEAT-SP) 37'-6" with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 SEQUENTIAL KINKING TERMINAL (SKT-350) 50'-0" 50:1 Flare	VDOT ST'D. GR-9
	TL-3 SKT Standard Post (SKT-SP) 50'-0" 50:1 Flare	VDOT ST'D. GR-9
	TL-3 FLEAT – MT Flared Median Terminal (For use with Std. MB-3)	VDOT ST'D. GR-9
TRINITY INDUSTRIES	TL-3 SLOTTED RAIL TERMINAL (SRT-350) 6-Post System 37'-6" Straight-Line Flare with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 (SRT-350) 8-Post System 37'-6" Parabolic Flare with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 CAT – 350, 31'-3" (For use with Std. MB-3. Min. 18'-9" MB-3 req'd.)	VDOT ST'D. GR-9
	TL-3 ET-2000 50'-0"	VDOT ST'D. GR-9
	TL-3 ET-PLUS (5" Channels and Butt Weld) 50'-0"	VDOT ST'D. GR-9
ENERGY ABSORPTION	TL-3 BRAKEMASTER – 350, 31'-6" (For use with Std. MB-3. Min. 12'-6" MB-3 req'd. Allow for additional 7'-3" anchorage prior to Post #1.)	VDOT ST'D. GR-9
LINDSAY TRANSPORTATION SOLUTIONS	TL-3 X-TENSION TANGENT END TERMINAL 50'-0" (Allow for additional 5'-6" anchorage prior to Post #1)	VDOT ST'D. GR-9
	TL-3 X-TENSION FLARED END TERMINAL 37'-6" with 4'-0" offset (Allow for additional 5'-6" anchorage prior to Post #1)	VDOT ST'D. GR-7
LINDSAY TRANSPORTATION SOLUTIONS	TL-3 X-TENSION MEDIAN END TERMINAL 37'-6" (For use with Std. MB-3. Min. 12'-6" MB-3 req'd. Allow for additional 5'-6" anchorage prior to Post #1)	VDOT ST'D. GR-9

CRASHWORTHY LONGITUDINAL CONCRETE BARRIERS
(NCHRP 350 Approved unless otherwise noted)

BARRIER SYSTEMS, INC.	TL-3 Narrow Quick Change Moveable Barrier
IOWA DOT	TL- 3 Iowa PCB Temporary CMB F-shape with Pin and Loop Connection
ROCKINGHAM PRECAST	TL-3 Temporary CMB-F shape, 12'-0" long with Slotted Tube/T-Bar Connection
SMITH-MIDLAND	TL-3 Temporary Concrete Median Barrier F-shape with J-J Hook Connection
VIRGINIA DOT	Temporary Concrete Median Barrier F-shape with Pin and Loop connection (20'-0" Length)
LINDSAY TRANSPORTATION SOLUTIONS	TL-3 Quickchange Moveable Barrier (QMB) Moveable Barrier
PENNSYLVANIA DOT	TL-3, 12'-6" Long Temporary Concrete Median Barrier F-Shape with Plate Connection

CRASHWORTHY LONGITUDINAL STEEL BARRIERS
(NCHRP 350 Approved)

ENERGY ABSORPTION	<p>TL-3 Vulcan Barrier (steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-7D PC)</p>
	<p>TL-3 Vulcan Barrier with Anchoring System VAS (steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-10A or MB-11A)</p>
HIGHWAY CARE, INC.	<p>TL-3 Barrier Guard 800(steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-7D PC)</p>
	<p>TL-3 Barrier Guard 800 MDS (Minimum Deflection System) (steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-10A or MB-11A)</p>
HILL & SMITH, INC.	<p>TL-3 Zoneguard Standard (steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-7D PC)</p>
	<p>TL-3 Zoneguard Minimum Deflection (steel barrier temporary use only)</p> <p>(May be used in place of VDOT std. MB-10A or MB-11A)</p>

PORTABLE VERTICAL PANELS

(NCHRP 350 Approved – devices purchased prior to 1/1/2020 may be used until 1/1/2030. Devices purchased after 12/31/19 must meet MASH)

IMPACT RECOVERY SYSTEM	Vertical Panel
WOUDENBERG ENTERPRISES	Msi Durastem Vertical Panel w/ Lightweight Warning Light
FLASHER HANDLING CORP.	Air Spill Barricade Vertical Panel
BENT MANUFACTURING COMPANY	Vertical Panel w/ Lightweight Warning Light ULTRA Vertical Panel w/ Lightweight Warning Light
WLI INDUSTRIES, INC.	SafetyCade Vertical Panel SafetyCade Extended Vertical Panel w/ Lightweight Warning Light
SERVICE SIGNING, L.C.	Vertical Panel
EASTERN METAL / U.S.A. SIGNS	Melba Vertical Panel

MAILBOX SUPPORTS **(NCHRP 350 Approved)**

FRIEND INNOVATIONS	Snowplow Friendly Metal Cantilever Mailbox Support
FORESIGHT PRODUCTS, INC.	V-Loc Mailbox Support System
S-SQUARE TUBE PRODUCTS	Nex Tube Mailbox Support System

CHANNELIZING DEVICES WITH AUXILIARY DEVICES*
(NCHRP 350 Approved)

FLASHER HANDLING CORP.	Plastic Substrate Sign Panel Mounted on face of Drum.
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* Drums with Type A or C warning lights are acceptable as Category 1 devices and therefore will not be listed in this document.

PORTABLE SIGN SUPPORTS

(NCHRP 350 Approved – devices purchased prior to 1/1/2020 may be used until 1/1/2030. Devices purchased after 12/31/19 must meet MASH)

EASTERN METAL/USA SIGNS	Super Flex Compact Stand with Fiberglass Leaf Spring C-102, C-132, C-142, C-200, C-202, C-232, C-242, C-301, C-832, C-842, C-902, C-942, X-501, X-550, X-551, X-600, X-601 Portable Sign Stands with roll-up signs only. Model Number X-842 with 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates, Model Number X-880 with 2mm AL/LDPE laminated substrate, and Model Numbers X552, X552b and X-602 with 2mm AL/LDPE laminated substrate.
FLASHER HANDLING CORP.	Bantam 2 portable sign stand, Featherweight 2 sign stand with roll-up signs.
DICKIE TOOL COMPANY	Model Numbers DL1003W, QLV-W, MSRIGID-30, QFV-60, QFV-84, PS-3330, PS-3330-S, DF3003, DF3000S, DF3003W, MSFLEX-30, QFV-48, DF3003S, PS-3000S, DF3000WQ, DF-4700, DF-4700TX, DF-4503, Uniflex 2000 and DL1003WQ with roll-up type sign only, and SLIP-60 with roll-up type sign.
MARKET DISPLAYS INTERNATIONAL (MDI)	Model Numbers 4814CS, 4814DLK, 4814HDK, 4814SSCK, 30CAM, 40CAM, 4814NSCK, 4884CS, 4860KA, 4850, 4812, 4815, 4814K with roll-up type signs. Model Numbers 4818 and 4860K with roll-up 10mm Coreplast and Inteplast corrugated plastic sign substrate or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate signs.

PORTABLE SIGN SUPPORTS
(NCHRP 350 Approved)
(continued)

<p style="text-align: center;">KORMAN SIGNS, INC.</p>	<p>Model Numbers SS560, SS560A, SS560E, and SS560AE with roll-up type signs or 0.100" and 0.080" aluminum type signs or 6.55mm Solid Plastic (ABS) substrate, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Minimum Mounting Height: 60" for diamond, 63" for rectangle. Model Numbers SS548, SS548A, SS548E, SS548AE, SS548C, SS548CE, SS548CA and S548CAE with roll-up type signs or 10mm corrugated plastic, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Minimum Mounting Height: 21". Model Numbers SS548UC, SS548UCA, SS548UCX and SS548UCAX with roll-up type signs or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Model Numbers SS548UCR, SS548UCRA, SS560UCR, SS560UCRA, SS548UCRX, SS548UCRAX, SS560UCRX and SS560UCRAX with roll-up type sign only.</p>
<p style="text-align: center;">TRAFFIX DEVICES, INC.</p>	<p>Big Buster Dual Spring Folding Leg sign stand with roll-up, 0.080" aluminum or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate, or 10mm Coreplast and Inteplast corrugated plastic sign substrate, Little Buster Dual Spring Folding Leg sign stand with roll-up, 0.080" aluminum mounted minimum 18 inches from bottom of sign, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate, or 10mm Coreplast and Inteplast corrugated plastic sign substrate, Econo Buster sign stands with roll-up or 2mm AL/LDPE sign.</p>
<p style="text-align: center;">SIGN UP CORPORATION</p>	<p>Model Numbers 1000X, 5000X, X-CELL, MS-2000xi, 27-SSX, 38-SSB, 48-SSB sign stands with roll-up type signs only.</p>
<p style="text-align: center;">RADIATOR SPECIALITY COMPANY</p>	<p>Model Numbers JL1000, JS3000, JS4000, JS4700 with roll-up signs only.</p>

PORTABLE SIGN SUPPORTS
(NCHRP 350 Approved)
(continued)

PACIFIC SAFETY SUPPLY, INC.	Model Numbers PS-3330 and PS-3000-S sign stands with roll-up type signs.
LANG PRODUCTS INTERNATIONAL, INC.	Model Numbers Basic TM 48, Basic TM 48 stand w/SnapFlag TM Dual Warning Flag system, CrossWindTM 204-HD, CrossWindTM 204-HD w/SnapFlag Dual Warning Flag system, 404-HD2 and 405-HD2. All models are to use roll-up type signs.
FLEX-O-LITE SERVICES AND MATERIALS CO.	Model Numbers QLV-W, QFV60, QFV-W, QFV48 sign stands with roll-up type signs.
BONE SAFETY SIGNS	Model Numbers SZ-412, SZ-412/S, SZ-460, SZ-460/S, SZ-484, SZ-484/S sign stands with roll-up type signs.

TYPE III BARRICADES*
(NCHRP 350 Approved)

BENT MANUFACTURING COMPANY	WZ-06 Approval Number
RECYCLED PLASTIC PRODUCTS	WZ-03 Approval Number
FLASHER HANDLING CORP.	WZ-12, WZ-40 Approval Number
CANTEL OF MEDFORD, INC.	WZ-31 Approval Number
DAVIDSON PLASTICS CORP.	WZ-39, WZ-63, WZ-179 Approval Number
EASTERN METAL/USA SIGNS.	WZ-59, WZ-103A Approval Number
PLASTIC SAFETY SYSTEMS, INC.	WZ-61, WZ-102, WZ-152, WZ-166, WZ-190, and WZ-196, WZ-233 Approval Number

TYPE III BARRICADES*
(NCHRP 350 Approved)
(continued)

AMERICAN FENCE & FAB, INC.	WZ-65 Approval Number
PROTECTION SERVICES, INC.	WZ-70 Approval Number
ST. LOUIS STEEL PRODUCTS	WZ-71 Approval Number
PLASTIC SAFETY SYSTEMS, INC.	WZ-72 Approval Number
BUNZL EXTRUSION TACOMA, INC.	WZ-77 Approval Number
THREE D TRAFFIC WORKS, INC.	WZ-82 Approval Number
TRAFFIC DEVICES, INC.	WZ-108 Approval Number
IMPACT RECOVERY SYSTEM, INC.	WZ-110 Approval Number
TRAFCON, INC.	Type III Barricade (WZ-116 Approval Number)
KORMAN SIGNS	WZ-100 through 100#7 Approval Number
PMG LOBO LIMITED	WZ-104 Approval Number
NES WORK SAFE	WZ-120 Approval Number
NES WORK SAFE	Type III Barricade (WZ-120 Approval Number)
XCESSORIES SQUARED	Type III Barricade (WZ-148 Approval Number)
UNITED RENTALS HIGHWAY TECHNOLOGIES	WZ-117, WZ-136
DAVIDSON TRAFFIC CONTROL PRODUCTS	WZ-151 Approval Number
WESTERN HIGHWAY	WZ-155 Approval Number

TYPE III BARRICADES*
(NCHRP 350 Approved)
(continued)

TRAFFIC SAFETY SERVICES	WZ-197 Approval Number
PLASTICADE TELSPAR TYPE III	WZ-331 Approval Number
PLASTICADE ANGLE IRON TYPE III	WZ-330 Approval Number
PLASTICADE POWER POST TYPE III	WZ-337 Approval Number

* Any Type III Barricade may have roll-up signs attached and still be in compliance with NCHRP 350 requirements. In addition, 10mm corrugated plastic or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substitutes mounted a minimum of 87” to the top of the sign unless otherwise directed by the FHWA may be used and still be in compliance with NCHRP 350 requirements.

TRUCK MOUNTED ATTENUATORS *

(NCHRP 350 Approved – devices purchased prior to 1/1/2020 may be used until 1/1/2030. Devices purchased after 12/31/19 must meet MASH)

ENERGY ABSORPTION	TL-3 ALPHA 100K TMA TL-3 SAFE STOP TMA
TRINITY INDUSTRIES SYRO STEEL	TL-3 MPS 350 TMA
IMPACT ABSORPTION	TL-3 VANDERBILT TMA
BARRIER SYSTEMS, INC.	TL-3 U-MAD 100K TMA
TRAFFIX DEVICES, INC.	TL-3 SCORPION C 10,000 TMA
RENCO, INC.	TL-3 RAM 100K TMA

TRAILER MOUNTED ATTENUATORS *

(NCHRP 350 Approved – devices purchased prior to 1/1/2020 may be used until 1/1/2030. Devices purchased after 12/31/19 must meet MASH)

ENERGY ABSORPTION SYSTEMS, INC.	TL-3 VORTEQ TMA
TRAFFIX DEVICES, INC.	TL-3 SCORPION TMA
BARRIER SYSTEMS, INC.	TL-2 & TL-3 U-MAD Trailer
GREGORY INDUSTRIES, INC.	TL-3 TTMA-100 TMA