

## APPENDIX D

## CONE INDEX REQUIREMENTS

Fine-Grained Soils

**Tracked Vehicles**

Vehicle Description	Vehicle Weight (kips)	VC <sub>1</sub>	VCI <sub>50</sub>
<u>Amphibious vehicles</u>			
Carrier, cargo, amphibious, tracked, M116	10.9	7	18
Landing vehicle, tracked, command, M5(LVTP5A1(CMD))	97.5	20	49
Landing vehicle, tracked, personnel, M5 (LVTP5A1)	87.8	19	45
<u>Armored bulldozers</u>			
Bulldozer, earthmoving tank, tank-mtd, M9 (tank, combat, 105-mm gun, M60, and M60A1)	116.0	23	53
Tractor, armored, combat earthmover (ACE), M9	35.6	18	41

**NOTES:**

1. Items listed include selected self-propelled vehicles as of January 1993. Certain items in final development or undergoing field testing have been included where the type of classification is pending.
2. The VCIs have been calculated from the formulas, curves, and tables in NRMM. The vehicle weight was based on normal design loads or combat weights, equipment, cross-country tire pressures, and crews as the conditions would be under full operational deployment in typical off-road movements. Trucks which could operate at lower tire pressures would generate slightly lower VCI values with increased tire deflection.
3. Amphibious vehicles and engineer tractors have grousers greater than 1 1/2 inches; all other tracked vehicles have grousers less than 1 1/2 inches.
4. One kip equals 1,000 pounds (US customary).

**Tracked Vehicles (continued)**

Vehicle Description	Vehicle Weight (kips)	VCI <sub>1</sub>	VCI <sub>50</sub>
<u>Combat vehicles</u>			
Armored reconnaissance airborne assault vehicle (General Sheridan), M551	35.8	15	35
Howitzer, heavy, self-propelled, full-tracked, 8-in, M55 (T108)	98.0	20	47
Howitzer, heavy, self-propelled, 8-in, M110 (T236E1)	58.5	20	47
Howitzer, medium, self-propelled, 155-mm, M109 (T196E1)	53.2	25	57
Howitzer, light, self-propelled, full-tracked, 105-mm, M37	46.0	N/A	58
Howitzer, light, self-propelled, full-tracked, 105-mm, M52	53.0	N/A	46
Howitzer, light, self-propelled, full-tracked, 105-mm, M52A1	53.0	N/A	46
Howitzer, light, self-propelled, 105-mm, M108	46.9	N/A	54
LAV-25, 8x8, light, armored vehicle	27.7	32	72
Mortar, infantry, self-propelled, full-tracked, 107-mm (4.2-in), M84	47.1	N/A	46
Tank, combat, full-tracked, 90-mm gun, M48	99.0	20	47
M48C	99.0	20	47
M48A1	104.0	21	49
M48A2	105.0	21	49
M48A2C	105.0	21	49
M48A3 (M48A1E2)	104.0	21	49
M48A5	106.0	22	50
Tank, combat, full-tracked, 105-mm gun, M60	110.0	21	48
M60A1	116.0	22	51
M60A3	110.0	20	46

**Tracked Vehicles (continued)**

Vehicle Description	Vehicle Weight (kips)	VCI <sub>1</sub>	VCI <sub>50</sub>
<u>Combat vehicles continued</u>			
Tank, combat, full-tracked, 120-mm gun, M1	115.0	23	54
M1A1	125.0	25	58
M 1A2	140.0	28	64
Vehicle, combat engineer, full-tracked, 165-mm gun, M729 (basic M60A1 tank)	115.0	N/A	54
<u>Armored vehicle bridges</u>			
Launcher, M48 tank chassis, transporting	96.0	N/A	49
Launcher, M48 tank chassis, transporting, with bridge, armored vehicle launched, scissoring type, class 60, 60-ft	128.0	N/A	65
Launcher, M60A1 chassis, transporting	86.3	15	36
Launcher, M60A1 chassis, transporting with bridge, armored vehicle launched, scissoring type, class 60, 60-ft	115.9	22	51
<u>Carriers</u>			
Carrier, cargo, tracked, 6-on, M548	28.0	N/A	37
Carrier, command post, light, tracked, M577	23.9	17	40
M577A1	24.4	17	40
Carrier, personnel, full-tracked, armored, M113	22.6	N/A	48
M113A1	23.4	N/A	49
M113A2	23.4	N/A	49
M113A3	23.6	N/A	49

**Tracked Vehicles (continued)**

Vehicle Description	Vehicle Weight (kips)	VCI <sub>1</sub>	VCI <sub>50</sub>
<u>Carriers (continued)</u>			
Infantry fighting vehicle, M2A1	50.2	15	35
M2A2	66.0	16	37
Multiple Launch Rocket System	54.2	15	35
Recovery vehicles			
Recovery vehicle, full-tracked, medium, M88	112.0	21	50
Recovery vehicle, full-tracked, light, armored, M578	54.0	21	49
<u>Wheeled Vehicles</u>			
<u>Trucks</u>			
Truck, utility, 1/4-ton, 4x4, M151	3.1	19	44
Truck, utility, 1 1/4-ton, 4x4 M998 (HMMWV)	7.5	20	47
Truck, cargo, 1 1/4-ton, 6x6, M561	9.6	19	44
Truck, cargo, 1 3/4-ton, 4x4, M 1028 commercial utility cargo vehicle (CUCV)	9.3	31	70
Truck, cargo, 2 1/2-ton, 6x6, M34	17.2	27	61
Truck, cargo, 2 1/2-ton, 6x6, M35A 1	19.2	26	59
Truck, cargo, 5-ton, 6x6 M923	32.5	30	68
Truck, cargo, 8-ton, 4x4 M520	43.4	43	97
Truck, cargo, 10-ton, 6x6 M125	49.5	37	84
M125A1	49.5	37	84
Truck, cargo, 10-ton, 8x8 M977	60.4	36	79
Truck, cargo, 5-ton, 6x6 M 1084	35.8	25	57

**Wheeled Vehicles (continued)**

Vehicle Description	Vehicle Weight (kips)	VCI <sub>1</sub>	VCI <sub>50</sub>
<b>Trucks (continued)</b>			
Truck, cargo, 2 1/2-ton, 4x4, M1078	21.8	25	57
Truck, dump, 2 1/2-ton, 6x6, M47	19.2	28	64
Truck, dump, 5-ton, 6x6, M51	32.7	32	72
M51A2	32.7	32	72
M929	32.7	30	68
Truck, tractor, 5-ton, 6x6 M52 (w/o payload)	17.8	21	48
M52A1 (w/o payload)	17.8	21	48
Truck, tractor, 10-ton, 6x6 M123 (w/o payload)	28.9	21	48
M123C (w/o payload)	30.2	22	50
M123D (w/o payload)	30.2	22	50
Truck, van, expandible, 2 1/2-ton, 6x6, M292	25.1	N/A	76
Truck, van, shop, 2 1/2-ton, 6x6, M109A1	21.0	N/A	65
Truck, van, shop, 2 1/2-ton, 6x6, M220	20.4	N/A	62
Truck, wrecker, crane, 2 1/2-ton, 6x6, M108	19.8	N/A	63
Truck, tractor, wrecker, medium, 5-ton, 6x6, M246 (w/ payload)	44.8	32	73
Truck, wrecker, medium, 5-ton, 6x6, M543	34.4	N/A	76
Palletized Loading System, 10 x 10	86.6	34	77