

NATURAL PRESERVATION ROUTES - 7 TON FLEXIBLE PAVEMENT DESIGN USING SOIL FACTORS^{1,3}

Required Gravel Equivalency (G.E. in inches) for various Soil Factors (S.F.)

For new construction or reconstruction use projected ADT or HCADT; for reconditioning projects use present ADT or HCADT

| 7 TON : LESS THAN 400 ADT | | | TYPE OF MATERIAL | SPECIFICATION | G.E. FACTOR | |
|----------------------------------|----------------------------|----------------------|--------------------------------|----------------------|----------------------------|-------------------|
| <u>S.F.</u> | Minimum <u>Bit G.E.</u> | Total <u>G.E.</u> | | | | |
| 50 | 7 | 7.3 ⁴ | Bituminous Pavement | 2360 | 2.25 | |
| 75 | 7 | 9.4 ⁴ | Cold-Inplace Recycling (CIR) | 2331 | 1.5 | |
| 100 | 7 | 11.5 | Rubblized Concrete | 2231 | 1.5 | |
| 110 | 7 | 12.4 | Full Depth Reclamation | 2331 | 1 | |
| 120 | 7 | 13.2 | Aggregate Base class 5 & 6 | 3138 | 1 | |
| 130 | 7 | 14 | Aggregate Sub-Base class 3 & 4 | 3138 | 0.75 | |
| | | | Select Granular Mat'l | 3149.2B2 | 0.5 | |
| 7 TON : 400 to 1000 ADT | | | AASHTO SOIL FACTOR | ASSUMED | GENERAL² | |
| <u>S.F.</u> | Minimum <u>Bit G.E.</u> | Total <u>G.E.</u> | SOIL CLASS | (S.F.) | R-VALUE | PLASTICITY |
| 50 | 7 | 9 ⁴ | A - 1 | 50 - 75 | 70 - 75 | NP |
| 75 | 7 | 12 | A - 2 | 50 - 75 | 30 - 70 | SP |
| 100 | 7 | 15 | A - 3 | 50 | 70 | NP |
| 110 | 7 | 16.2 | A - 4 | 100 - 130 | 20 | SP |
| 120 | 7 | 17.4 | A-5 | 130+ | na | na |
| 130 | 7 | 18.6 | A - 6 | 100 | 12 | P |
| | | | A - 7 - 5 | 120 | 12 | P |
| | | | A - 7 - 6 | 130 | 8 | P |

Values may not be exact due to rounding

¹For 10 Ton design see Bituminous Pavement Design Chart (Aggregate Base)

²General Plasticity: NP = nonplastic; SP= semi-plastic; P = plastic; na = not applicable (An A-5 soil rarely occurs in Minnesota)

³Safety edge (30° to 35° wedge) are recommended to minimize edge dropoff. See www.dot.state.mn.us/stateaid/sa_safety_edge.html

⁴These GE values are for the finished pavement section. During construction additional GE may be warranted for a construction platform.

Origin 1/11/2011

Revised: 11/9/2015