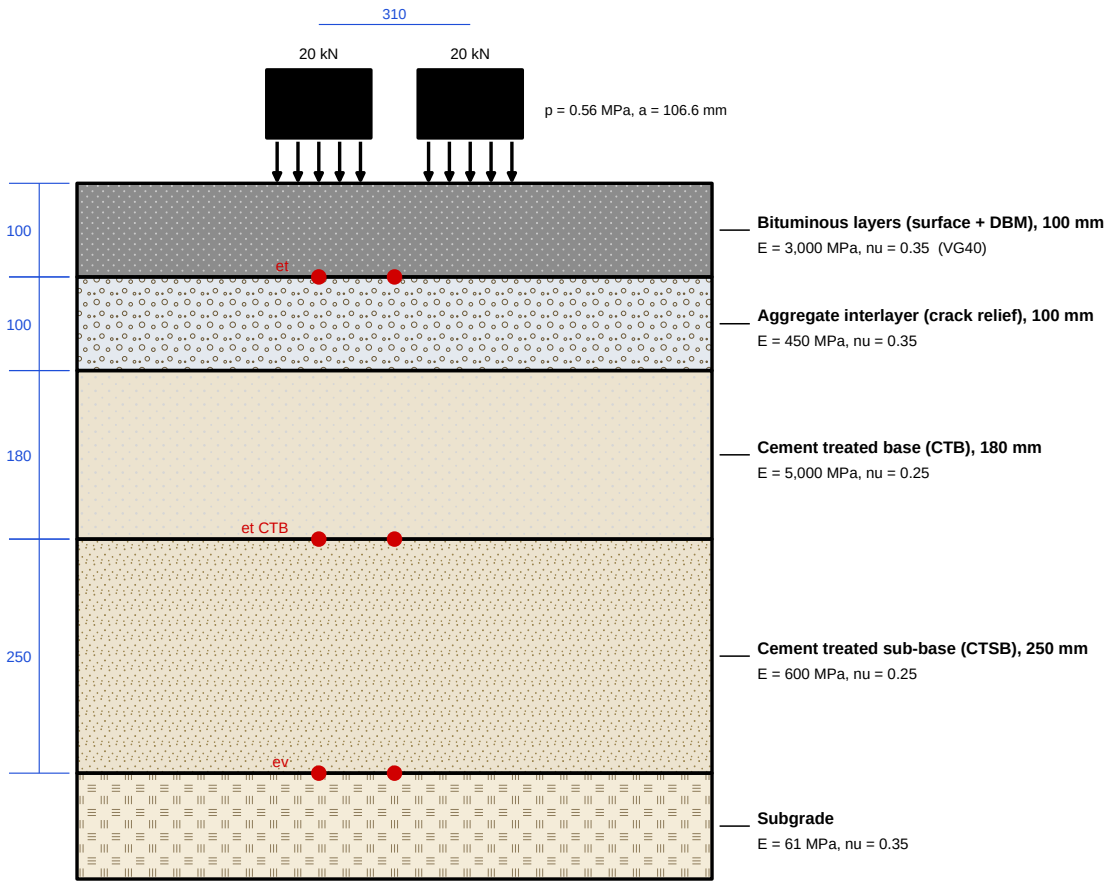
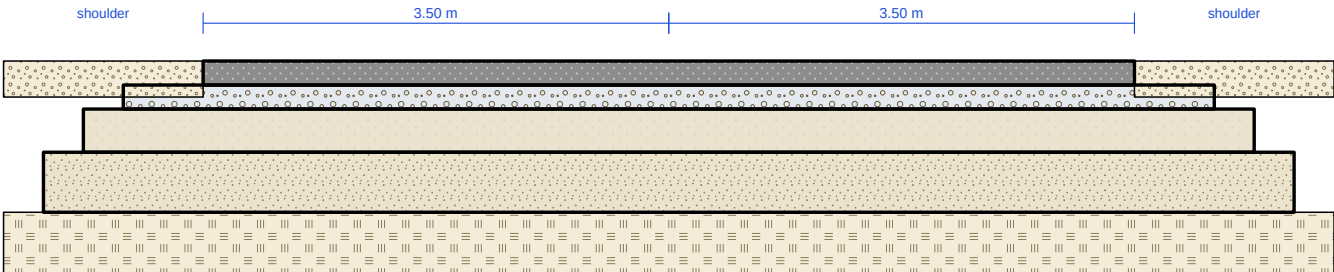


PAVEMENT COMPOSITION AND CRITICAL LOCATIONS



Thicknesses to scale vertically; subgrade semi-infinite. Red dots: critical strain locations (Table 3.1).

TYPICAL CROSS SECTION (SCHEMATIC)



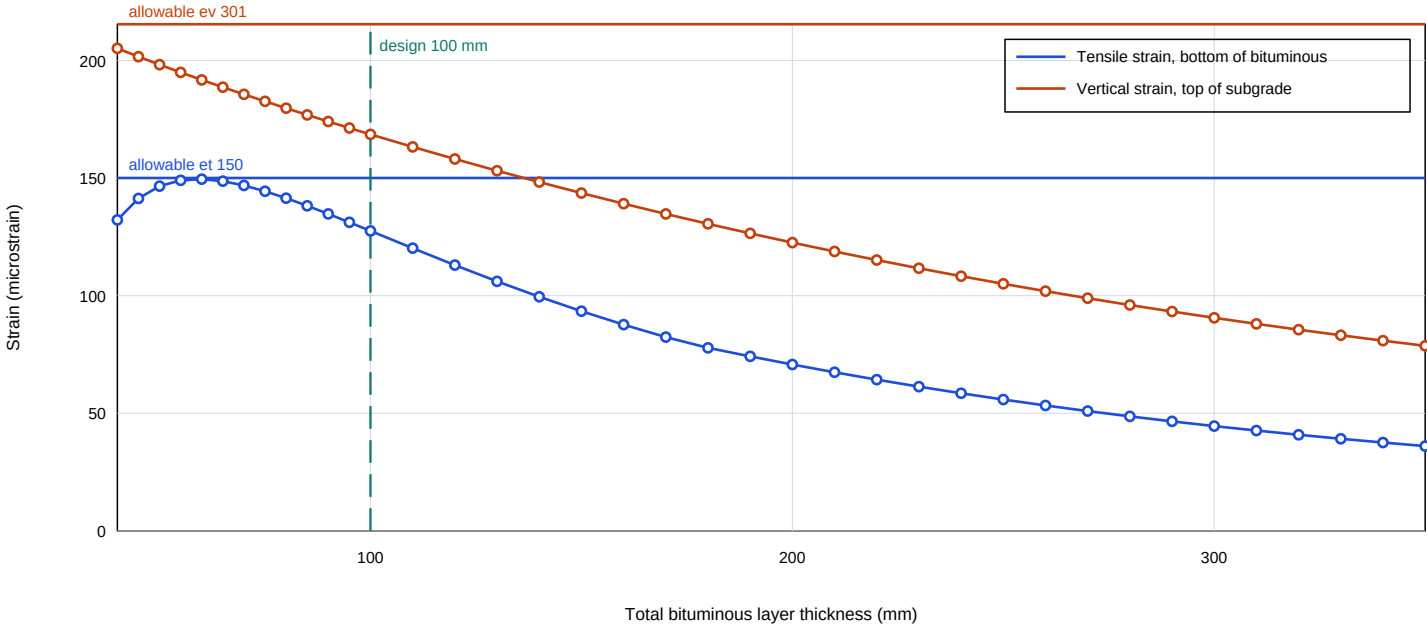
Dual carriageway - two lanes each way - layer thicknesses exaggerated; total pavement 630 mm.

DESIGN SUMMARY (IRC:37-2018)

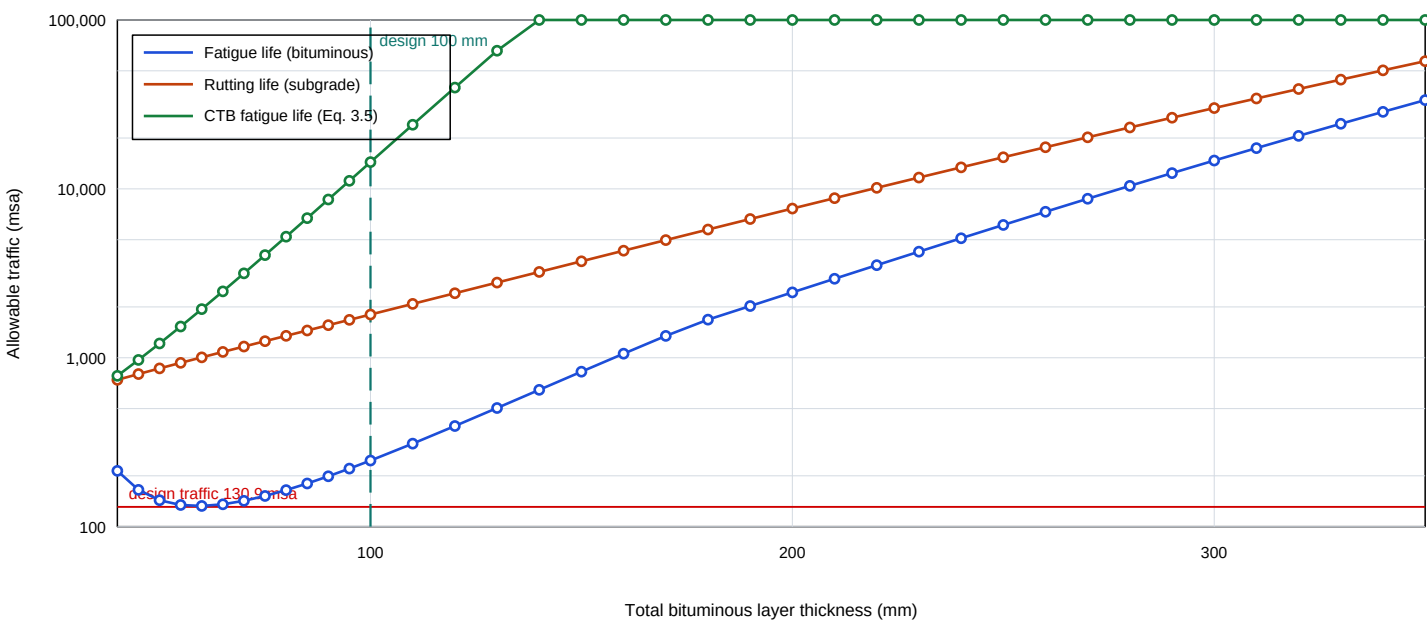
Design traffic	130.9 msa (90 % reliability)
Effective subgrade modulus	61.1 MPa (CBR 7.0 %)
Composition	Bituminous + aggregate interlayer + CTB + CTSB
Layers (mm)	Bituminous layers 100 + Aggregate interlayer 100 + Cement treated base
Total pavement thickness	630 mm
Bituminous layer modulus	3,000 MPa (VG40)
Tensile strain bottom of bituminous	127.5 / 150.0 allowable
Vertical strain top of subgrade	168.6 / 300.6 allowable
Fatigue life / rutting life	246.3 / 1,802.9 msa
CTB tensile strain (0.80 MPa) / life	44.3 / 14,400.8 msa
CTB cumulative fatigue damage	0.788
Least bituminous thickness (other layers as given)	100 mm

Result: ALL CHECKS SATISFIED

STRAINS vs BITUMINOUS THICKNESS



LIFE vs BITUMINOUS THICKNESS



NOTES

- All dimensions in mm.
- Materials and workmanship to MoRTH Specifications (5th rev.).
- Bottom DBM: rich bottom mix, design air voids as adopted for fatigue.
- GSB extended full width with drainage and filter layers (Cl. 7.2.1).

IRC 37 example check

Flexible pavement 630 mm

Designed: - Checked: -

Date: 31 Oct 2026 Scale: as shown Sheet 1 of 1