Limit States and Load Factors for Load and Resistance Factor Rating (LRFR)

Bridge Type	Limit State	Dead Load γ_{DC}	Dead Load γ_{DW}	Design Load		Legal Load γ_{LL}
				Inventory γ_{LL}	Operating γ_{LL}	
Steel	Strength I	1.25	1.50	1.75	1.35	1.40†
	Service II	1.00	1.00	1.30	1.00	1.30
	Fatigue	0.00	0.00	0.75	–	–
Prestressed Concrete	Strength I	1.25	1.50	1.75	1.35	1.40†
	Service III	1.00	1.00	0.80	–	0.80†

† – Variance from the AASHTO *Manual for Bridge Evaluation*.

Allowable Tensile Stress in Prestressed Concrete at Service Limit State

Exposure	Girder Type	σ_{allow} ‡ Initial Rating ksi (MPa)	σ_{allow} Future Rating ksi (MPa)
Non-Corrosive	Cored Slabs	0	$0.19\sqrt{f_c'}$ $(0.5\sqrt{f_c'})$
	Box Beams	0	$0.19\sqrt{f_c'}$ $(0.5\sqrt{f_c'})$
	I-Girders	$0.19\sqrt{f_c'}$ $(0.5\sqrt{f_c'})$	$0.24\sqrt{f_c'}$ $(0.62\sqrt{f_c'})$
Corrosive and Highly Corrosive	Cored Slabs	0	$0.0948\sqrt{f_c'}$ $(0.25\sqrt{f_c'})$
	Box Beams	0	$0.0948\sqrt{f_c'}$ $(0.25\sqrt{f_c'})$
	I-Girders	0	$0.0948\sqrt{f_c'}$ $(0.25\sqrt{f_c'})$

‡ – As required for design, see Chapter 2 for details.

LRFR Load Factors and Prestressed Concrete Stress Limits

Figure 6-134