

The beta factors for prestressing force effects are set so that when multiplied by the respective gamma factor, the product is unity. Beta of 1.67 for live load plus impact from H loads reflects AASHTO's way of handling permit loads.

### 3. $\phi$ (Phi) Factor

$\phi$ (phi), the third factor, relates to materials and is called either a capacity reduction factor or a strength reduction factor. Its purpose is to account for small adverse variations in material strength, workmanship, and dimensions. It applies separately to different magnitudes for various load effects in reinforced concrete, and various manufacturing processes in prestressed concrete. Since  $\phi$  relates to materials rather than loads, its values are given in the various material specifications. For structural steel it is almost always 1.0. For concrete it varies from 0.7 to 1.0.