In the study of distribution of non-uniform loads*, it was found that the midspan distribution width was a function of the width to span ratio. In most situations, this ratio will be much greater than 1.0.

However, for the special cases where this ratio is less than 1.0, the basic distribution widths* must be expressed as KL, where K is determined from the figure below.

For edge loads, the factor K must be halved. Where central openings are present, a net width should be used for determining the width to span ratio.

*For further information, refer to the Research Notes entitled “LOAD DISTRIBUTION”.

A design example is given on the reverse side.
WIDTH TO SPAN RATIO EFFECT ON LOAD DISTRIBUTION

**GIVEN:**
- 8" Spancrete® hollowcore floor shown
- Superimposed live load = 40 psf
- Superimposed dead load = 10 psf
- Plank dead load = 64 psf

**PROBLEM:**
Determine the equivalent effective design loadings to enable the floor slabs within the allowable distribution widths to carry the loads shown.

**SOLUTION:**
- Width/Span = \( \frac{16.67}{28} = 0.6 \)
  - From chart, \( K = 0.44 \)
  - Figure separately the distribution for the concentrated load, the wall load, and the uniform loads.

  **For flexural design:**
  
  \[
  P_u = 1.2 \times (2800) + 1.6 \times (4400) = 844 \text{ plf}
  \]
  \[
  W_u = 1.2 \times (700) + 1.6 \times (1100) = 211 \text{ psf}
  \]
  \[
  W_u = 1.2 \times (64 + 10) + 1.6 \times (40) = 153 \text{ psf}
  \]

  **For shear design:**
  - Width to span ratio does not affect design for shear.
  - See RESEARCH NOTE "LOAD DISTRIBUTION."

**Note:** Sample calculations are intended to illustrate the concept presented and do not represent all considerations necessary for the complete design. This research was done using 40" wide, 8" thick Standard Spancrete. However, this concept applies to all Spancrete cross sections.