

ON THE APPROXIMATE ANALYSIS OF HYPERBOLIC PARABOLOID SHELL ROOFS
BY THE METHOD OF WEIGHTED RESIDUALS

(VOLUME II)

by

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SECTION 4

Doubly curved shell simply supported
along the generating parabolas.

APPENDIX E
DESIGN TABLES

E.1 Types of Shells Covered

Design tables are presented here in four sections for the following cases.

- Section 1. Rectangular hyperbolic paraboloid
Clamped along the characteristics lines.
- Section 2. Rectangular hyperbolic paraboloid simply supported along the characteristic lines.
- Section 3. Doubly curved shell clamped along the generating parabolas.
- Section 4. Doubly curved shell simply supported along the generating parabolas.

E.2 Non-dimensional Parameters

The tables are based on the non-dimensional parameters.

Poisson ratio $= \mu$

Span ratio $= b/a$

Shallowness ratio $= h R/L^2$

and Curvature ratio $= k_{11}/k_{22}$

where

b = half of the span in y-direction

a = half of the span in x-direction

h = Thickness of the shell

$R = 1/k_{12} = \frac{1}{k_{xy}}$ (if $k_{22} = 0$)
 $= 1/k_{22} = 1/k_{yy}$ (if $k_{12} = 0$)