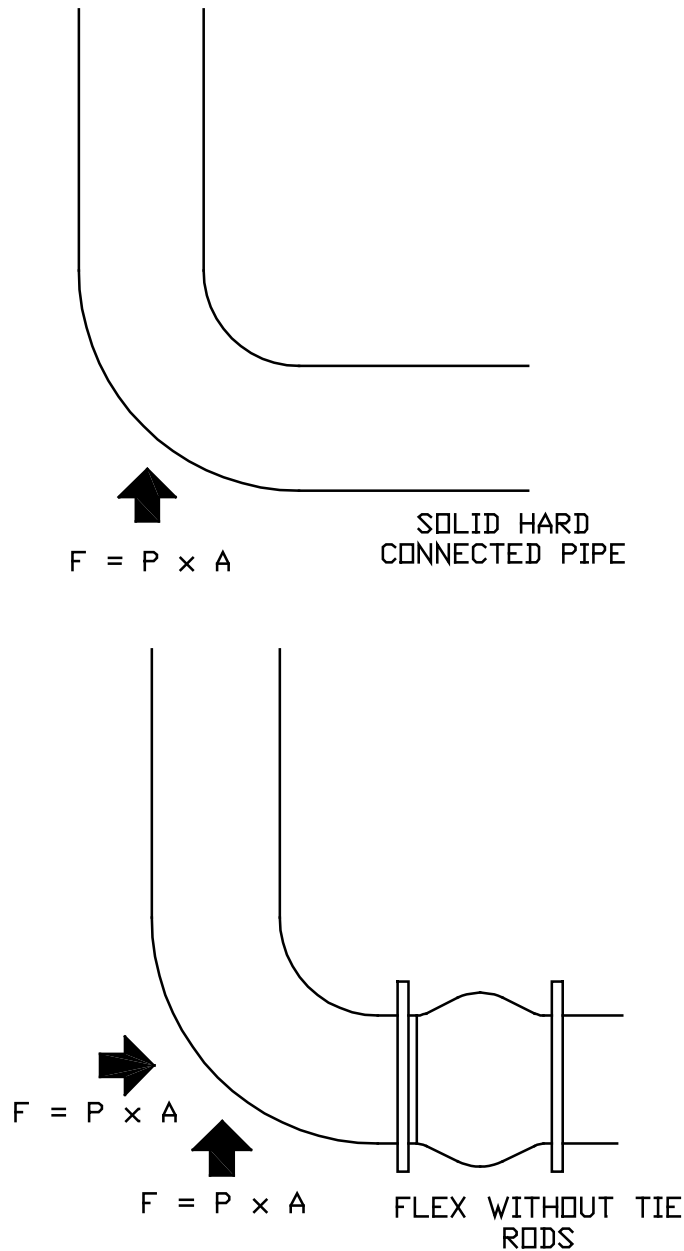


DESIGN FORCES IN RISERS

(STATIC UNBALANCED HYDRAULIC FORCES AT BOTTOM OF RISER)



THESE ARE CONCENTRATED FORCES THAT ACT AT THE POINT OF TERMINATION OF THE PIPE OR RISER RUN.

HYDRAULIC FORCES / BOTTOM OF RISER

PAGE 1 OF 4



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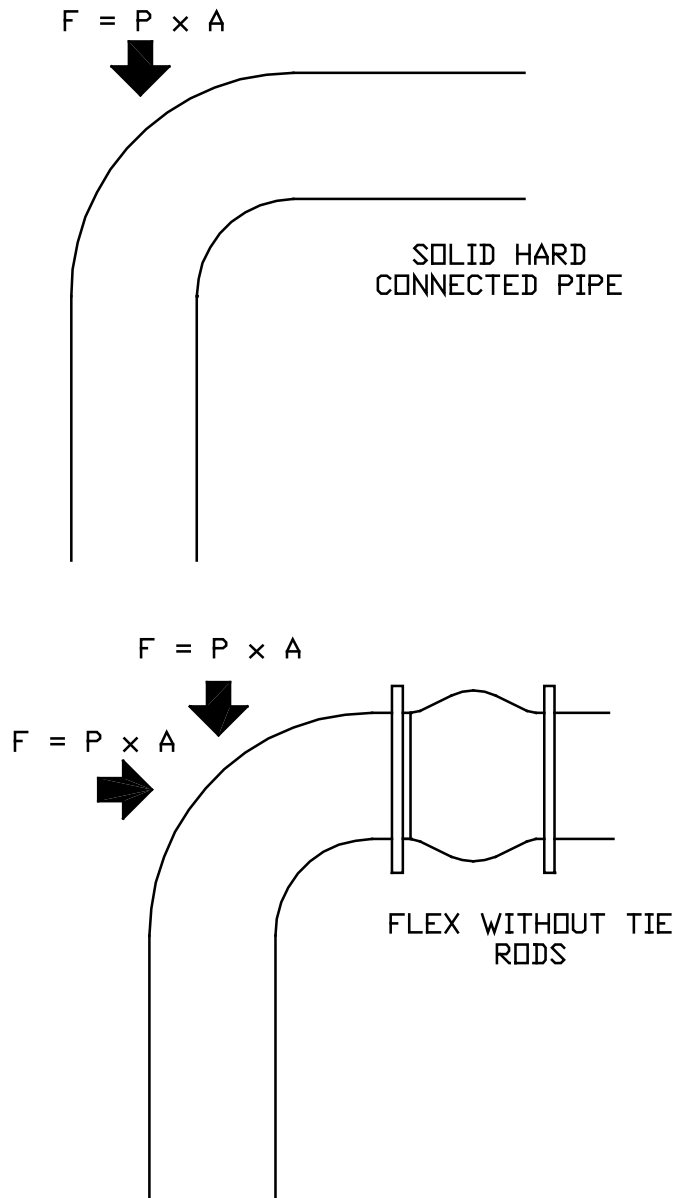
DOCUMENT:

R1.0



DESIGN FORCES IN RISERS

(STATIC UNBALANCED HYDRAULIC FORCES AT THE TOP OF RISER)



THESE ARE CONCENTRATED FORCES THAT ACT AT THE POINT OF TERMINATION OF THE PIPE OR RISER RUN.

HYDRAULIC FORCES / TOP OF RISER

PAGE 2 OF 4



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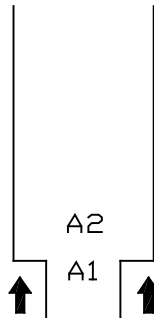
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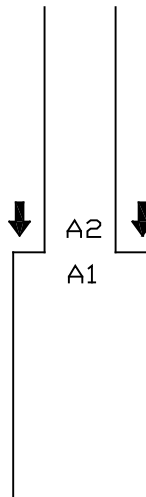
DESIGN FORCES IN RISERS

(STATIC UNBALANCED HYDRAULIC FORCES AT SECTION CHANGES IN A RISER)



$$F = P \times (A2 - A1)$$

SMALL TO LARGE SECTION CHANGE



$$F = P \times (A1 - A2)$$

LARGE TO SMALL SECTION CHANGE

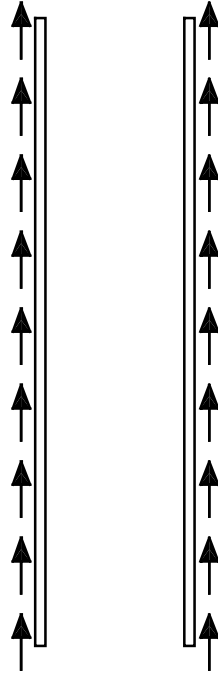
THESE ARE CONCENTRATED FORCES THAT ACT AT THE POINT SECTION CHANGE IN THE RISER RUN.

HYDRAULIC FORCES / RISER SECTION CHANGES

PAGE 3 OF 4

DESIGN FORCES IN RISERS

(PIPE WEIGHT REACTION FORCES IN A RISER)



$$F = \sum W$$

CONTINUOUSLY DISTRIBUTED WEIGHT LOAD

THIS IS THE REACTION TO A LOAD THAT IS DISTRIBUTED CONTINUOUSLY ALONG THE LENGTH OF THE RISER.

WEIGHT REACTION LOADS-FORCES / DISTRIBUTED ALONG RISER

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