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<b>AP42 Section:</b>	<b>7.1</b>
<b>Related</b>	<b>10</b>
<b>Title:</b>	<b>Table: Summary of Fitting Loss Factor Calculations</b>

TABLE SUMMARY OF FITTING LOSS FACTOR CALCULATIONS

FITTING TYPE

1. Access Hatch	
a. Bolted Cover, Gasketed	$F_2 \left( \frac{D_s}{D_b} \right)$
b. Unbolted Cover, Gasketed	$\left[ F_{9A} - (F_{12} - F_2) \right] \left( \frac{D_s}{D_B} \right)$
c. Unbolted Cover, Ungasketed	$\left[ \left( \frac{F_7 + F_{9B}}{2} \right) - (F_{12} - F_2) \right] \left( \frac{D_s}{D_B} \right)$
2. Automatic Gauge Float Well	
a. Bolted Cover, Gasketed	$1 a + 3 (F_6 - F_2)$
b. Unbolted Cover, Gasketed	$1 b + 3 (F_6 - F_2)$
c. Unbolted Cover, Ungasketed	$1 c + 3 (F_6 - F_2)$
3. Column Well	
a. Built-up Column - Sliding Cover, Gasketed	$1 b + (F_{12} - F_2)$
b. Built-up Column - Sliding Cover, Ungasketed	$1 c + (F_{12} - F_2)$
c. Pipe Column - Flexible Fabric Sleeve Seal	$(F_{10} - F_2)$
d. Pipe Column - Sliding Cover, Gasketed	$1 b + \left[ F_{11} - 1 b \left( \frac{D_{B-11}}{D_s} \right) \right]$
e. Pipe Column - Sliding Cover, Ungasketed	$1 c + \left[ F - 1 b \left( \frac{D_{B-11}}{D_s} \right) \right]$

4. Ladder Well

a. Sliding Cover, Gasketed

$$1 b \left( \frac{D_L}{D_s} \right) + \left\{ \frac{(F_{12} - F_2) + (F_{15} - \left[ F_2 \left( \frac{D_{B-15}}{D_B} \right) \right])}{2} \right\} \left( \frac{P_L}{P_C} \right)$$

b. Sliding Cover, Ungasketed

$$1 c \left( \frac{D_L}{D_s} \right) + \left\{ \frac{(F_{12} - F_2) + (F_{15} - \left[ F_2 \left( \frac{D_{B-15}}{D_B} \right) \right])}{2} \right\} \left( \frac{P_L}{P_C} \right)$$

5. Deck Leg or Hanger Well

a. Adjustable

$$F_3 - F_2$$

6. Sample Pipe or Well

a. Slotted Pipe - Sliding Cover, Gasketed

$$3 d + (F_4 - F_5)$$

b. Slotted Pipe - Sliding Cover, Ungasketed

$$3 e + (F_4 - F_5)$$

c. Sample Well - Slit Fabric Seal, 10% Open Area

$$(F_{14} - F_2)$$

7. Stub Drain - 1 in. dia.

$$(F_6 - F_2)$$

8. Vacuum Breaker

a. Weighted Mechanical Actuation, Gasketed

$$F_2 \left( \frac{D_V}{D_B} \right)$$

b. Weighted Mechanical Actuation, Ungasketed

$$F_1 \left( \frac{D_V}{D_B} \right)$$

DEFINITION OF VARIABLES

$F_x$  = loss measured in fitting bench test number x, divided by  $P^*$  ( $P^* = 5.0$  psia (lb.mole/yr))

$D$  = Well diameter (in)

$D_s$  = standard column well diameter (24 in.)

$D_B$  = bench test drum diameter in most tests, except where noted (22.5 in.)

$D_{B-11, B-15}$  = bench test drum diameter in tests 11 and 15 (30 in.)

$D_L$  = diameter of ladder well (36 in.)

$D_V$  = diameter of vacuum breaker well (10 in.)

$P$  = Perimeter (in.)

$P_L$  = ladder perimeter (66 in.)

$P_C$  = built-up column perimeter (40 in.)

TABLE SUMMARY OF DECK FITTING FACTORS,  $K_f$

<u>Deck Fitting Type</u>	<u><math>K_f</math> (lb.mole/yr)</u>
1. Access Hatch	
a. Bolted Cover with Gasket	1.6
b. Gasketed, Unbolted Cover	11
c. Ungasketed, Unbolted Cover	25
2. Automatic Gauge Float Well	
a. Bolted Cover with Gasket	5.1
b. Gasketed, Unbolted Cover	15
c. Ungasketed, Unbolted Cover	28
3. Column Well	
Built-up Column Well	
a. Gasketed Sliding Cover	33
b. Ungasketed Sliding Cover	47
Pipe Column Well	
c. Flexible Fabric Sleeve Seal	10
d. Gasketed Sliding Cover	19
e. Ungasketed Sliding Cover	32
4. Ladder Well	
a. Gasketed Sliding Cover	56
b. Ungasketed Sliding Cover	76

i.	Deck Leg or Hanger Well	
a.	Adjustable	7.9
ii.	Slotted Pipe or Well	
a.	Slotted Pipe - Gasketed Sliding Cover	44
b.	Slotted Pipe - Ungasketed Sliding Cover	57
c.	Sample Well - Slit Fabric, 10% Open Area	12
7.	Stub Drain - 1 inch diameter	1.2
3.	Vacuum Breaker	
a.	Gasketed, Weighted Mechanical Actuation	0.7
b.	Ungasketed, Weighted Mechanical Actuation	0.9