Risk-Based Inspection Methodology
Part 3—Consequence of Failure Methodology
Annex 3.B Contents

Risk-Based Inspection Methodology
Part 3—Consequence of Failure Methodology
Annex 3.B—SI and U.S. Customary Conversion Factors

3.B.1 General

The SI and U.S. customary unit conversion factors for equations that appear throughout Part 3 of this document are provided in Table 3.B.2.1 of this Annex.

3.B.2 Tables

Table 3.B.2.1—SI and U.S. Customary Conversion Factors for Equations in Part 3

Conversion Factor	Equation Reference	SI Units	U.S. Customary Units
C_1	(3.3)	$31,623 \dfrac{mm^2}{m^2}$	$12 \dfrac{inch}{ft}$
C_2	(3.6), (3.7)	$1,000 \dfrac{mm^2}{m^2}$	1
C_3	(3.12)	$4,536\ kg$	$10,000\ lb$
C_{4A}	(3.18)	$2.205\ \dfrac{1}{kg}$	$1\ \dfrac{1}{lb}$
C_{4B}	(3.63), (3.64), (3.72), (3.109), (3.110)	$2.205\ \dfrac{sec}{kg}$	$1\ \dfrac{sec}{lb}$
C_5	(3.19), (3.71)	$25.2 \dfrac{kg}{sec}$	$55.6 \dfrac{lb}{sec}$
C_6	(3.25)	$55.6\ K$	$100\ {}^oR$
C_8	(3.63), (3.64), (3.A.7), (3.A.8)	$0.0929\ m^2$	$1\,ft^2$
C_9	(3.69)	$0.123 \dfrac{m^2 \cdot sec}{kg}$	$0.6 \dfrac{ft^2 \cdot sec}{lb}$
C_{10}	(3.70)	$9.744 \dfrac{m^2}{kg^{0.06384}}$	$63.32 \dfrac{ft^2}{kg^{0.06384}}$
C_{12}	(3.90), (5.11), (3.110)	$1.8\ \dfrac{1}{K}$	$\dfrac{1}{{}^oR}$
C_{13}	(3.91), (5.41), (3.221)	$6.29 \dfrac{bbl}{m^3}$	$0.178\ \dfrac{bbl}{ft^3}$
C_{14}	(3.103), (3.138), (3.152), (3.162)	1	$3,600 \dfrac{sec}{hr}$
C_{15}	(3.105)	$4.685 \dfrac{m^{0.33}}{S^{0.22}}$	$1\ \dfrac{in^2}{ft^{1.67} S^{0.22}}$

Table 3.B.2.1—SI and U.S. Customary Conversion Factors for Equations in Part 3

Conversion Factor	Equation Reference	SI Units	U.S. Customary Units
C_{16}	(3.113), (3.114), (3.116), (3.117)	$294.44\ K$	$530\ ^oR$
C_{17}	(3.128), (3.129)	$0.001\dfrac{kg}{m^2 \cdot sec}$	$2.048 \times 10^{-4}\dfrac{lb}{ft^2 \cdot sec}$
C_{18}	(3.132)	$0.0050\ m$	$0.0164\ ft$
C_{19}	(3.140)	$1.085\ (kPa \cdot m)^{0.092}$	$1.015\ (psia \cdot ft)^{0.092}$
C_{20}	(3.141)	$1.013\ kPa$	$0.147\ psia$
C_{21}	(3.141)	$5,328\ K$	$9,590\ ^oR$
C_{22}	(3.158)	$5.8\dfrac{m}{kg^{0.333}}$	$14.62\dfrac{ft}{lb^{0.333}}$
C_{23}	(3.160)	$0.45\dfrac{sec}{kg^{0.333}}$	$0.346\dfrac{sec}{lb^{0.333}}$
C_{24}	(3.161)	$2.6\dfrac{sec}{kg^{0.167}}$	$2.279\dfrac{sec}{lb^{0.167}}$
C_{25}	(3.163)	$0.0296\dfrac{1}{kPa^{0.32}}$	$0.0549\dfrac{1}{psia^{0.32}}$
C_{26}	(3.170)	$100\dfrac{kPa}{bar}$	$14.5\dfrac{psi}{bar}$
C_{27}	(3.171)	$1\dfrac{kg^{\frac{1}{3}}}{m \cdot s^{\frac{1}{3}}}$	$0.3967\dfrac{lb_m}{ft \cdot s^{\frac{1}{3}}}$
C_{28}	(3.172)	$1,000\dfrac{1}{kPa}$	$6,895\dfrac{1}{psia}$
C_{29}	(3.192)	$4.303 \times 10^{-4}\dfrac{sec^2}{m^2}$	$1.85 \times 10^{-4}\dfrac{lb_m}{psi \cdot ft^3}$
C_{30}	(3.195)	$2.150 \times 10^{-7}\dfrac{kg}{J}$	$6.43 \times 10^{-7}\dfrac{1}{lb_f \cdot ft}$
C_{31}	(5.35)	$864\dfrac{sec \cdot m}{cm \cdot day}$	$7,200\dfrac{sec \cdot ft}{inch \cdot day}$

Table 3.B.2.1—SI and U.S. Customary Conversion Factors for Equations in Part 3

Conversion Factor	Equation Reference	SI Units	U.S. Customary Units
C_{32}	(5.5)	$0.543 \dfrac{sec \cdot bbl}{day \cdot mm^2 \cdot m}$	$106.8 \dfrac{sec \cdot bbl}{day \cdot inch^2 \cdot ft}$
C_{33}	(5.37)	$0.0815 \dfrac{sec \cdot bbl}{day \cdot mm^2 \cdot m}$	$16.03 \dfrac{sec \cdot bbl}{day \cdot inch^2 \cdot ft}$
C_{34}	(5.37)	$86.4 \dfrac{m}{day \cdot mm^2}$	$1.829 \times 10^5 \dfrac{ft}{day \cdot inch^2}$
C_{35}	(5.38)	$29.6195 \dfrac{bbl}{day^{0.26} \cdot mm^{0.2} \cdot m^{1.64}}$	$8.0592 \dfrac{bbl}{day^{0.26} \cdot inch^{0.2} \cdot ft^{1.64}}$
C_{36}	(5.53)	$30.5\,m$	$100\,ft$
C_{37}	(5.38)	$1.408 \times 10^{-8} \dfrac{m^{1.4}}{day \cdot mm^{1.8}}$	$6.995 \times 10^{-5} \dfrac{ft^{1.4}}{day \cdot inch^{1.8}}$
C_{38}	(5.39)	1.1341	403.95
C_{39}	(5.39)	3.9365	7.2622
C_{40}	(5.39)	5.9352	5.0489
C_{41}	(3.90)	$32^{o}C$	$0^{o}F$