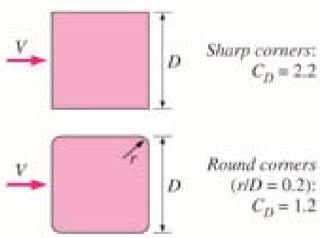
APPENDIX 1/*LAMPIRAN 1*

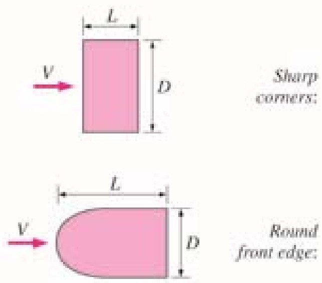
<u>Representative Of Drag Coefficients.</u>

Drag coefficients C_D of various two-dimensional bodies for Re > 10^4 based on the frontal area $A = bD$, where b is the length in direction normal to the page (for use in the drag force relation $F_D = C_D A \rho V^2/2$ where V is the upstream velocity)

Square rod



Rectangular rod

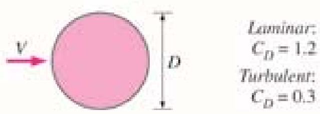


L/D	C_D
0.0*	1.9
0.1	1.9
0.5	2.5
1.0	2.2
2.0	1.7
3.0	1.3

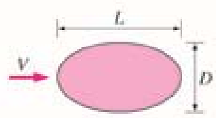
* Corresponds to thin plate

L/D	C_D
0.5	1.2
1.0	0.9
2.0	0.7
4.0	0.7

Circular rod (cylinder)

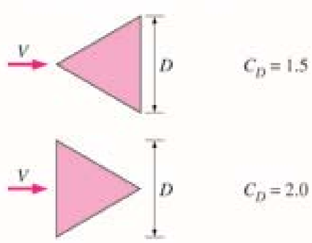


Elliptical rod

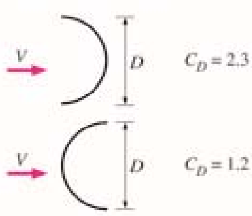


	C_D	
L/D	Laminar	Turbulent
2	0.60	0.20
4	0.35	0.15
8	0.25	0.10

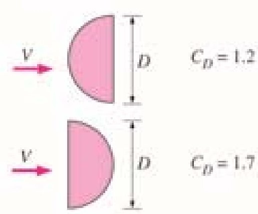
Equilateral triangular rod



Semicircular shell



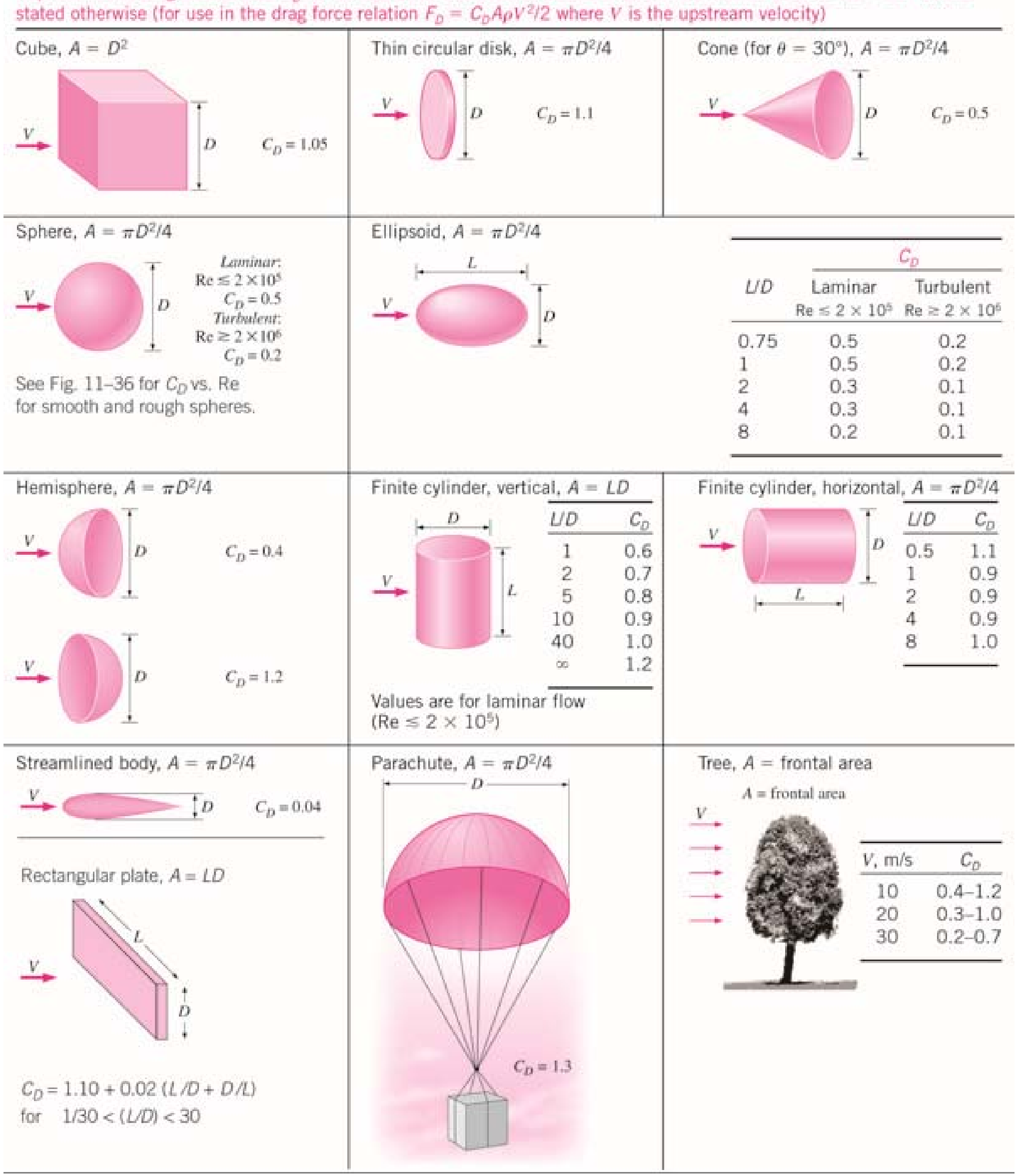
Semicircular rod



APPENDIX 1/*LAMPIRAN 1*

Lampiran 1 – continued

Representative drag coefficients C_D for various three-dimensional bodies based on the frontal area for Re > 10^4 unless stated otherwise (for use in the drag force relation $F_D = C_D A \rho V^2/2$ where V is the upstream velocity)



Ellipsoid:

L/D	C_D Laminar Re ≤ 2×10^5	C_D Turbulent Re ≥ 2×10^6
0.75	0.5	0.2
1	0.5	0.2
2	0.3	0.1
4	0.3	0.1
8	0.2	0.1

Finite cylinder, vertical:

L/D	C_D
1	0.6
2	0.7
5	0.8
10	0.9
40	1.0
∞	1.2

Finite cylinder, horizontal:

L/D	C_D
0.5	1.1
1	0.9
2	0.9
4	0.9
8	1.0

Tree:

V, m/s	C_D
10	0.4–1.2
20	0.3–1.0
30	0.2–0.7