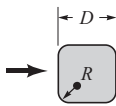
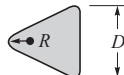



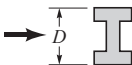

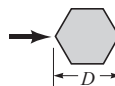
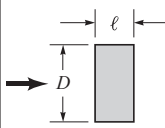


Shape	Reference area A (b = length)	Drag coefficient $C_D = \frac{\mathcal{D}}{\frac{1}{2}\rho U^2 A}$	Reynolds number $Re = \rho UD/\mu$														
 <p>Square rod with rounded corners</p>	$A = bD$	<table><tr><th>R/D</th><th>C_D</th></tr><tr><td>0</td><td>2.2</td></tr><tr><td>0.02</td><td>2.0</td></tr><tr><td>0.17</td><td>1.2</td></tr><tr><td>0.33</td><td>1.0</td></tr></table>	R/D	C_D	0	2.2	0.02	2.0	0.17	1.2	0.33	1.0	$Re = 10^5$				
R/D	C_D																
0	2.2																
0.02	2.0																
0.17	1.2																
0.33	1.0																
 <p>Rounded equilateral triangle</p>	$A = bD$	<table><tr><th>R/D</th><th>C_D</th></tr><tr><td>0</td><td>1.4</td></tr><tr><td>0.02</td><td>1.2</td></tr><tr><td>0.08</td><td>1.3</td></tr><tr><td>0.25</td><td>1.1</td></tr></table>	R/D	C_D	0	1.4	0.02	1.2	0.08	1.3	0.25	1.1	$Re = 10^5$				
R/D	C_D																
0	1.4																
0.02	1.2																
0.08	1.3																
0.25	1.1																
 <p>Semicircular shell</p>	$A = bD$	<table><tr><th>C_D</th></tr><tr><td>2.3</td></tr><tr><td>1.1</td></tr></table>	C_D	2.3	1.1	$Re = 2 \times 10^4$											
C_D																	
2.3																	
1.1																	
 <p>Semicircular cylinder</p>	$A = bD$	<table><tr><th>C_D</th></tr><tr><td>2.15</td></tr><tr><td>1.15</td></tr></table>	C_D	2.15	1.15	$Re > 10^4$											
C_D																	
2.15																	
1.15																	
 <p>T-beam</p>	$A = bD$	<table><tr><th>C_D</th></tr><tr><td>1.80</td></tr><tr><td>1.65</td></tr></table>	C_D	1.80	1.65	$Re > 10^4$											
C_D																	
1.80																	
1.65																	
 <p>I-beam</p>	$A = bD$	2.05	$Re > 10^4$														
 <p>Angle</p>	$A = bD$	<table><tr><th>C_D</th></tr><tr><td>1.98</td></tr><tr><td>1.82</td></tr></table>	C_D	1.98	1.82	$Re > 10^4$											
C_D																	
1.98																	
1.82																	
 <p>Hexagon</p>	$A = bD$	1.0	$Re > 10^4$														
 <p>Rectangle</p>	$A = bD$	<table><tr><th>ℓ/D</th><th>C_D</th></tr><tr><td>≤ 0.1</td><td>1.9</td></tr><tr><td>0.5</td><td>2.5</td></tr><tr><td>0.65</td><td>2.9</td></tr><tr><td>1.0</td><td>2.2</td></tr><tr><td>2.0</td><td>1.6</td></tr><tr><td>3.0</td><td>1.3</td></tr></table>	ℓ/D	C_D	≤ 0.1	1.9	0.5	2.5	0.65	2.9	1.0	2.2	2.0	1.6	3.0	1.3	$Re = 10^5$
ℓ/D	C_D																
≤ 0.1	1.9																
0.5	2.5																
0.65	2.9																
1.0	2.2																
2.0	1.6																
3.0	1.3																

■ **FIGURE 9.28** Typical drag coefficients for regular two-dimensional objects (Refs. 5, 6).