General Architectural Hinge Information

Selection of the Proper Weight and Bearing Type

Standard Weight ..... Plain Bearing
Standard Weight ..... Ball Bearing, Concealed Bearing
Heavy Weight..... Ball Bearing, Concealed Bearing

Considerations to determine Weight and Bearing type:

1. Weight of Door
2. Frequency of Use
3. Frame
4. Door Hardware
   - Always use ball bearing or concealed bearing hinges for doors with door closers and in all fire rated openings. Heavy weight doors and high frequency doors should use heavy weight ball bearing or concealed bearing hinges.
   - Use ball bearing or concealed bearing hinge with spring hinges.

Guidelines for Frequency of Door Usage

Build Type	Daily Usage	Yearly Usage	Hinge Type
High Frequency/ Heavy Weight Door			Heavy Weight
Large Department Store Entrance	5,000	1,825,000	
Hospital Corridor and Surgical Doors	5,000	1,825,000	
Large Office Building Entrance	4,000	1,460,000	
School Entrance	1,250	356,200	
School Toilet Door	1,250	356,200	
Office Stairwell	500	182,500	
Office Building Toilet Door	400	118,000	
Medium Frequency/ Medium Weight Door			Standard Weight
School Corridor Door	100	36,500	
Hospital Consultation Rooms	100	36,500	
Office Building Corridor Door	80	15,000	
Store Toilet Door	60	15,000	
Storage Room	50	18,250	
Low Frequency/ Light Weight Door			Plain Bearing
Residential Entrance	30	10,950	
Interior Residential	20	7,300	

Minimum Architectural Cycle Requirements

Grade 1:	2,500,000	Heavy Weight Ball & Concealed Bearing
Grade 2:	1,500,000	Standard Weight Ball & Concealed Bearing
Grade 3:	350,000	Light Weight Plain Bearing

Guidelines for Estimating Door Weight

Average Architectural Grade Door Weight in Pounds per Square Foot

Door Thickness	1-3/8"	1-3/4"	2"	2-1/4"	2-1/2"
Door Material					
Hollow Metal 18 gauge	4.3	4.6			
Hollow Metal 16 gauge	5.4	5.8			
Hollow Metal 15 gauge	6.2	6.5			
Hollow Metal 14 gauge	7.0	7.3			
Hollow Metal 13 gauge	8.3	8.7			
Hollow Metal 12 gauge	9.9	10.2			
Hollow Metal 11 gauge	11.2	11.6			
Hollow Metal 10 gauge	12.8	13.0			
Ash	4.5	5.3	6.0	6.8	7.5
Birch	3.8	4.3	5.0	5.6	6.3
Fir	3.0	3.5	4.0	4.5	5.0
Mahogany	4.5	5.3	6.0	6.8	7.5
Oak	6.0	7.3	8.0	9.0	10.0
White Pine	3.0	3.5	4.0	4.0	5.0
Mineral Core		4.0			

Considerations to determine Hinge Size

1. Door width
2. Door thickness
3. Weight
4. Clearance

Door Thickness In Inches	Door Width In Inches	Hinge Height In Inches
1-3/8"	Up to 32"	3-1/2"
1-3/8"	32" to 37"	4"
1-3/4"	Up to 36"	4-1/2"
1-3/4"	36" to 48"	5"
1-3/4"	Over 48"	6"
2", 2-1/4", 2-1/2"	Up to 42"	5" heavy weight
2", 2-1/4", 2-1/2"	Over 42"	6" heavy weight

RAMCO

General Architectural Hinge Information

Guidelines for Architectural Hinge Width

Door Thickness	Clearance Needed	Hinge Open Width
1-3/8	3/4	4
1-3/4	1	4
1-3/4	1-1/2	4-1/2
1-3/4	2	5
1-3/4	3	6
2	1	4-1/2
2	1-1/2	5
2	2-1/2	6
2-1/4	1	5
2-1/4	2	6
2-1/2	3/4	5
2-1/2	1-3/4	6
3	3/4	8
3	2-3/4	8
3	4-3/4	10

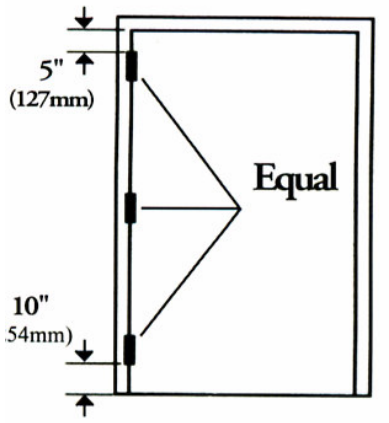
Guidelines for Number of Architectural Hinges

1. Doors up to 60” ..... 2 hinges
2. Doors 60” to 90” ..... 3 hinges
3. Doors 90” to 120”..... 4 hinges

Guidelines for Architectural Hinge Metal

1. **Interior doors or non-corrosive areas use:**
   Plated or Painted Steel
2. **Interior labeled door use:**
   Plated or Painted Steel, Stainless Steel
3. **Interior doors in corrosive areas use:**
   Stainless Steel, Brass, Bronze
4. **Exterior doors use:**
   Stainless Steel, Brass, Bronze

Location of Architectural Hinges



Top hinge 5” from jamb rabbet to top of barrel

Bottom hinge 10” from bottom edge of barrel to finished floor

Third hinge centered between top and bottom hinges

Note: Certain western states use a standard 7” from top and 11” from the bottom

RAMCO