

1951 Stormproof Hinge

| Product Code | Size (mm) | Size (in) | Finish | Avg Guage of Metal (mm) | Screw Size | No of Screw Holes | Application Grade | Duty |
|--------------|-----------|-----------|---------------------------------|-------------------------|------------|-------------------|-------------------|------|
| 1951-02 | 63 | 2 1/2 | Epoxy Brown | 1.8 | 8 | 12 | C | MD |
| 1951-09 | 63 | 2 1/2 | Zinc Plated | 1.8 | 8 | 12 | C | MD |
| 1951-14 | 63 | 2 1/2 | Zinc Plated & Yellow Passivated | 1.8 | 8 | 12 | C | MD |
| 1951-16 | 63 | 2 1/2 | Sheradized | 1.8 | 8 | 12 | C | MD |
| 1951-19 | 63 | 2 1/2 | Electro Brassed | 1.8 | 8 | 12 | C | MD |

1951BR Stormproof Hinge - Solid Brass

| Product Code | Size (mm) | Size (in) | Finish | Avg Guage of Metal (mm) | Screw Size | No of Screw Holes | Application Grade | Duty |
|--------------|-----------|-----------|-------------|-------------------------|------------|-------------------|-------------------|------|
| 1951BR-08 | 63 | 2 1/2 | Self Colour | 1.8 | 8 | 12 | C | MD |

216 Sash Hook

| Product Code | Size (mm) | Size (in) | Finish | Avg Guage of Metal (mm) | Screw Size | No of Screw Holes |
|--------------|-----------|-----------|---------------------------------|-------------------------|------------|-------------------|
| 0216-14 | 25 | 1 | Zinc Plated & Yellow Passivated | 1.25 | 8 | 2 |

790 Quadrant Stay

| Product Code | Size (mm) | Size (in) | Finish | Screw Size | Screw Holes Per Pair |
|--------------|-----------|-----------|-------------|------------|----------------------|
| 0790-6-01 | 152 | 6 | Epoxy White | 8 | 6 |
| 0790-8-01 | 203 | 8 | Epoxy White | 10 | 6 |

500 Steel Casement Stay (Flat Pin)

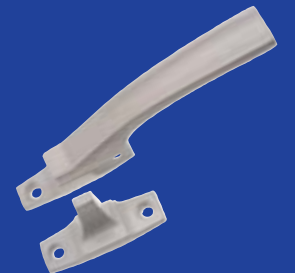
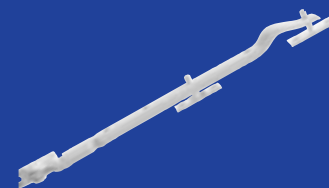
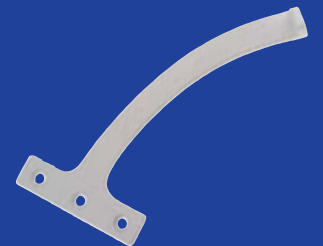
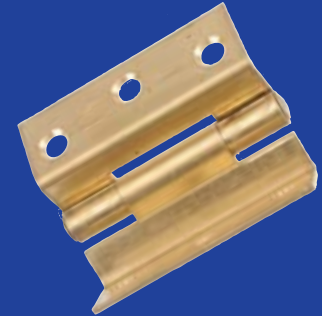
| Product Code | Size (mm) | Size (in) | Finish | Screw Size | No of Screw Holes |
|--------------|-----------|-----------|-------------|------------|-------------------|
| 0500-01 | 254 | 10 | Epoxy White | 10 | 6 |
| 0500-02 | 254 | 10 | Epoxy Brown | 10 | 6 |

504 Diecast Casement Fastener - Complete with Fittings for Flat or 9° Frames

| Product Code | Size (mm) | Size (in) | Finish | Screw Size | No of Screw Holes |
|--------------|-----------|-----------|-------------|------------|-------------------|
| 0504-01 | - | - | Epoxy White | 8 | 4 |

667 Fanlight Catch

| Product Code | Size (mm) | Size (in) | Finish | Screw Size | No of Screw Holes |
|--------------|-----------|-----------|-------------|------------|-------------------|
| 0667-01 | - | - | Epoxy White | 6 | 4 |



The products shown in this literature are designed for use on doors, windows, cabinets and similar fittings for normal building construction.

To assist customers in determining the correct hinge for a particular application, a grading and duty have been given (see Guide to Hinge Specification).

GUIDE TO HINGE SPECIFICATION

Table 1 shows a range of maximum recommended hinge loadings (application grade). Tables 2 and 3 are a guide to the categories of duty to which door and window hinges may be subjected. Where appropriate a specific application grade is indicated against each size and type of hinge.

NB: Although it is known that many hinges will carry larger loads than those indicated by the application grades, it must be stressed that when related to types of duty they are performing, other factors can cause the failure of a hinge. For this reason the application grades have been determined with a reasonable factor of safety to ensure a long working life for the type of hinge used.

Three Hinges to a Door

Though adopted universally by today's quality conscious builder, the reasons for this sound practice bear repeating.

- **To counteract the tendency of doors to warp and throw out of alignment.**
 - a. The third hinge will hold the butt edge of the door in alignment and help prevent the door from warping.
 - b. A warped door cannot be properly latched or locked.
 - c. Squeaking hinges are usually due to a warped door – so too are draughts.
 - d. Lightweight doors have more tendency to warp than heavy doors.
 - e. It costs less to put the third hinge on every door in a house than to repair a single warped door later.
- **To add strength to glazed doors.**
For doors with glass we recommend 3 hinges with 1 hinge mounted in the middle of the door to strengthen it and combat the tendency to 'whip'.
- **To reduce the load carried by each hinge, thereby extending the hinge life, and allowing heavier doors to be hung with the minimum of door sag.**

TABLE 1. Hinge Loadings

| APPLICATION GRADE | MAXIMUM RECOMENDED WEIGHT | |
|-------------------|---------------------------|-----|
| | KG | LB |
| X | 90 | 198 |
| A | 72 | 160 |
| B | 55 | 121 |
| C | 37 | 82 |
| D | 25 | 55 |
| E | 17 | 38 |
| F | 12 | 27 |
| G | 10 | 22 |
| H | 7 | 16 |
| I | 5 | 11 |

Weights apply when using 3 hinges per door or window.

TABLE 2. Type of Duty Associated with Door Hinges

Doors and doorsets are employed in a range of situations in a building varying from an interior door in a dwelling which is rarely used and then generally with care, to an entrance door of a shop which is in constant use by people who have little incentive to exercise care, and who may be carrying bulky objects or propelling trolleys.

Light Duty

Description: Low frequency of use by those with a high incentive to exercise care, e.g. by private house owners – small chance of accident occurring or of misuse. **Examples:** Internal doors in dwellings, External doors in dwellings providing secondary access to private areas.

Medium Duty

Description: Medium frequency of use primarily by those with some incentive to exercise care – some chance of accident occurring or of. **Examples:** External doors of dwellings providing access to designated public areas but not used by public or by people carrying or propelling bulky objects.

Heavy Duty

Description: High frequency of use by public and others with little care. Chance of accident occurring and of misuse. **Examples:** Doors of shops, schools, hospitals and of other designated public areas and which are used by the public and others frequently carrying or propelling bulky objects, and any application where and overhead door closer is used.

TABLE 3. Type of Duty Associated with Window Hinges

Windows are employed in a range of situations in buildings varying from a small vent light in a dwelling which is rarely used and then generally with care to a large window in the corridor of a public building which is in constant use by people who have little incentive to exercise care. This is a wide spectrum of use but for all practical purposes this range of use can be accommodated by the three levels of duty defined below.

Light Duty

Description: Low frequency of use by those with high incentive to exercise care, e.g. by private house owners – small chance of accident occurring or of misuse. **Examples:** Windows in dwellings.

Medium Duty

Description: Medium frequency of use primarily by those with some incentive to exercise care – some chance of accident occurring or of misuse. **Examples:** Windows in shops, offices, multi-storey dwellings and factories.

Heavy Duty

Description: High frequency of use by public and others with little incentive to exercise care. Chance of accident occurring and of misuse. **Examples:** Windows in schools, hospitals and other buildings to which the public have access.

TABLE 4. Average Door Weights

| APPLICATION GRADE | AVERAGE WEIGHT KG |
|--|-------------------|
| Cupboard, Wardrobe, Cabinet, Louvred Doors & Shutters. Maximum size: 2040mm x 626mm x 40mm | 3 to 10 |
| Light Internal, Large Wardrobe & Louvred Doors. Maximum Size: 2040mm x 926mm x 40mm | 10 to 17 1/2 |
| Heavy Internal Doors. Maximum Size: 2040mm x 1012mm x 40mm | 17 1/2 to 25 |
| Half Hour Fire Check Doors. Maximum Size: 2040mm x 826mm x 44mm | 25 to 37 1/2 |
| Light External Doors. Maximum Size: 2000mm x 907mm x 40mm | 20 to 37 1/2 |
| Heavy External Doors. Maximum Size: 2000mm x 1002mm x 44mm | 37 1/2 to 55 |
| Oversize or Special External Doors | 55 to 90 |

TABLE 5. Estimated Frequency of Door Operation

| APPLICATION GRADE | ESTIMATED FREQUENCY | | | |
|--|---------------------|-----------|----------------|------------|
| | DAILY | ANNUALLY | | |
| Large Department Store Entrance | 5,000 | 1,500,000 | HIGH FREQUENCY | HEAVY DUTY |
| Large Office Building Entrance | 4,000 | 920,000 | | |
| Cinema or Theatre Entrance | 1,300 | 455,000 | | |
| School Entrance | 1,250 | 225,000 | | |
| School Toilets Entrance Door | 1,250 | 225,000 | | |
| City Centre Shop Entrance | 1,000 | 300,000 | | |
| Large City Bank Entrance | 1,000 | 250,000 | | |
| School Corridor Fire Check Door | 600 | 108,000 | | |
| Town Bank Entrance | 500 | 125,000 | | |
| City Centre Restaurant Entrance | 500 | 150,000 | | |
| Large Office Corridor Fire Check Door | 450 | 104,000 | | |
| Town Centre Shop Entrance | 400 | 120,000 | | |
| Large Office or Factory Toilet Entrance Door | 400 | 92,000 | | |
| School Classroom Door | 80 | 15,000 | | |
| Office Door | 75 | 18,000 | | |
| Store Toilet Door | 60 | 18,000 | | |
| Dwelling - Front Entrance | 12 | 4,400 | | |
| Dwelling - Rear or Side Entrance | 15 | 5,400 | | |
| Dwelling - Living Area's Communicating Doors | 30 | 10,8000 | | |
| Dwelling - Bathroom/Toilet Door | 20 | 7,200 | | |
| Dwelling - Cupboard Doors | 12 | 4,300 | | |
| Dwelling - Bedroom Doors | 9 | 3,200 | | |
| Dwelling - Wardrobe/Closet Doors | 6 | 2,200 | | |
| Dwelling - Cabinet Furniture Doors | 5 | 1,800 | | |

All Crompton Hinges have been suitably tested with minimal wear occurring within their recommended application grades and using 3 hinges per door.

Hinge Cranking (Swaging)

Cranking (sometimes called swaging) is a slight offset of the hinge leaf at the knuckle, which permits the leaves to come closer together, thereby reducing the gap between door leaf and jamb when the hinge is fitted. Standard gaps are laid down in BS 4787
Note 'A': When hinge leaves are not cranked, the hinges are slightly less in width.

| DIMENSION 'X' | APPLICATION TO BS 4787 |
|----------------------|------------------------|
| 2.0mm +1.0mm - 0.5mm | FOR INTERNAL DOOR SETS |
| 2.5mm +1.0mm - 0.5mm | FOR EXTERNAL DOOR SETS |

HINGE NOT CRANKED (SEE NOTE 'A')



GAP IS EQUAL TO PIN DIAMETER IN UNCRANKED HINGE

HINGE CRANKED (STANDARD)



GAP BETWEEN DOOR LEAF AND JAMB WHEN HINGE LEAVES ARE RECESSED

HINGE CRANKED (FULL)



GAP IS A NORMAL 0.25mm

HINGE CRANKED (CENTRE)



Hanging of Door and Window Hinges

Based on ISO Recommendations R1226 - Symbolic Designation of direction of closing and faces of doors, windows and shutters Part 1 Hardware rotating components such as hinges or components for locking and closing doors, windows or shutters, are not always identical; their form depends whether they are used on leaves closing in one direction or the other. The purpose of the ISO Recommendation is to facilitate the international trade of these components by specifying a standard convention to identify the direction or rotation and to provide designations and symbols accordingly which are unambiguous, avoiding the use of such term as 'left hand' and 'right hand' which causes mistakes owing to divergent national uses. These designations take the form of the figures 5 and 6 and do not necessitate the use of drawings.

CLOCKWISE CLOSING - 5

(formerly known as left hand)



ANTI-CLOCKWISE CLOSING - 6

(formerly known as right hand)



| PATTERN | VARIATION | SIZE | FINISH | DESCRIPTION |
|---------|-----------|------|--------|--|
| 466 | CC5 | 3" | SC | RIISING BUTT HINGE, FOR CLOCKWISE CLOSING DOORS |
| 466 | AC6 | 3" | SC | RIISING BUTT HINGE, FOR ANTI-CLOCKWISE CLOSING DOORS |

Hinge Lubrication

It is recommended that hinges are lubricated immediately after installation with a light machine oil and at 6 monthly intervals thereafter. In situations where the door is subjected to a high frequency usage or abnormal environmental conditions the hinges should be lubricated at least every 3 months.

Product Descriptions and Illustrations

Whilst every effort has been made to ensure accuracy of information and illustration within this booklet, the Company can not accept any responsibility for claims arising from errors or omissions. In the interests of product improvements and customer service, we reserve the right to make modifications to any products without prior notice.