

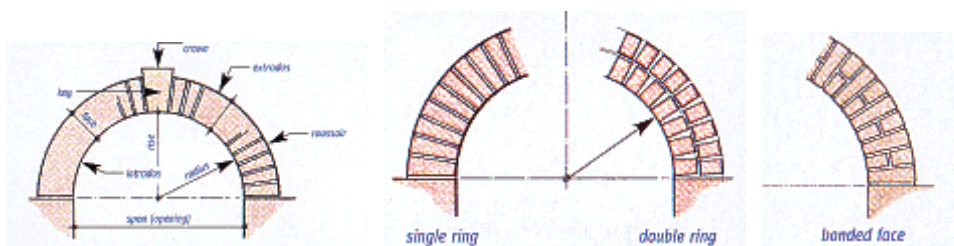


Simple Arches in Clay Brickwork

The introduction of the profiled steel lintel in both flat and curved format has contributed to the increased popularity of the brick arch and at the same time, simplified it's construction.

In this 'Get it Right' basic arch forms are covered, their assembly being from either a proprietary arch former or traditional centring.

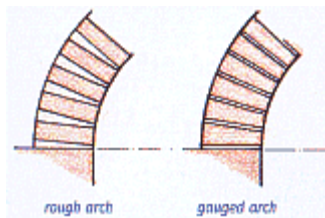
Arch Terminology



Domestic applications will usually be the single ring format using the 215mm brick dimension as the face depth of the arch. Double ring format arches to small radii will facilitate the use of headers with tapering joints and remain visually acceptable.

Bonded arch faces are more applicable to large span deep face applications, but can add an element of aesthetic appeal to smaller arch forms.

Arch Classification

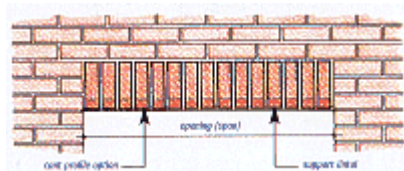


Arches are classified by their shape and also by the form the in which the individual arch bricks (called Voussoirs) are made.

Rough Arches - standard brick voussoirs with tapering mortar joints.

Gauged arches - specially made or cut voussoirs with parallel mortar joints.

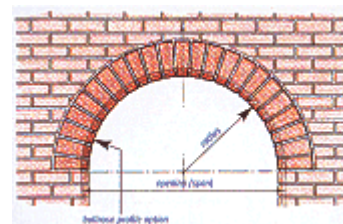
Arch Shapes Soldier



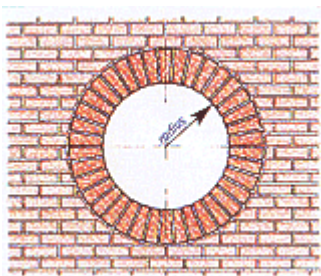
Not strictly an arch but a head. An assembly of bricks on end supported by an proprietary steel lintel and visually portraying the supporting action of an arch.

Semi Circular

This is a complete half circle with all voussoirs being identical. Not visually acceptable when constructed with standard bricks as the mortar joints become very wide on the arch extrados. Use an unequal number of voussoirs so that their is a central key brick with an equal number either side.



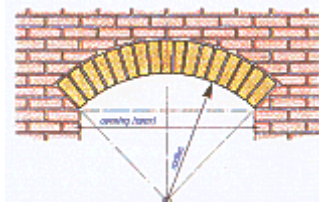
Bulls-eye



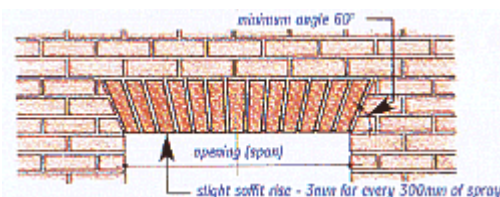
The commonly used description for a full circular arch which in essence is two semi-circular arches with a common spring line. All voussoirs are identical. The total being an equal number but when divided in half must be odd to accommodate the two key bricks. An alternative arrangement is a key brick at each point of the compass'.

Segmental

An arch which is a true radius but is only part (segments) of a full circle and where all voussoirs are identical. This most popular format will permit, with a low rise and large span, the use of standard bricks with tapering joints. The use of an odd number of voussoirs will ensure that one will be central at the arch crown to form the key.



Flat or Skewback

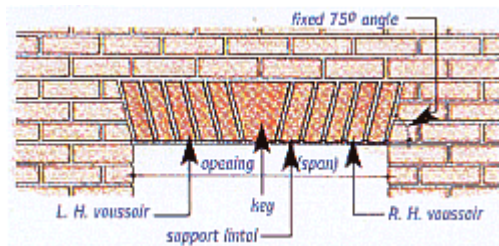


So called because the top is flat and level and the ends sloping (skewback) to form a supporting wedge. Each voussoir has its own unique shape and special drawings and templates are usually required for their manufacture.

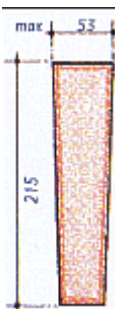
Arch

This arch intends to display some of the vital qualities of the flat skewback but uses a limited number of special components. A separate Design Guide is available from Ibstock showing the wide range of options and formats available.

Ibstock Easy



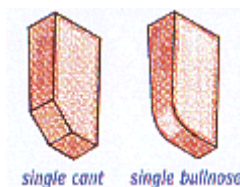
Arches from Standard Bricks



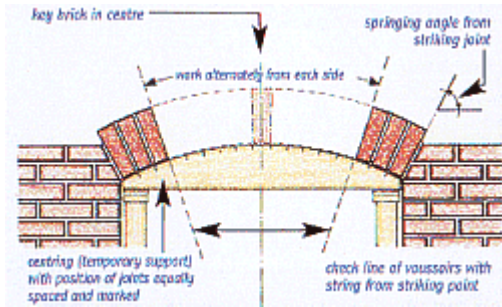
Voussoirs for most semi-circular, bulls-eye or segmental arches can be saw cut from standard 215x102x65mm bricks and this Ibstock service is particularly useful where immediate availability is a requirement. It should be noted that the maximum voussoir dimension after cutting is 53mm. Thinner joints, say 8mm or less, will maintain appearance in these instances. If oversize fired blocks are available larger voussoir sizes are achievable. Flat or skewback arches with an unbonded face dimension of 215mm cannot be cut from standard units.

Additional Enhancements

Rounded (bullnose) and angled (cant) features can be applied to the soffit edges of all arch voussoirs as shown in the semi-circular and soldier arch types. If the profile is not required to continue down the arch support brickwork, handed profiled stops are available.



Arch Construction



a. Set up temporary support and mark around the top edge each voussoir plus a joint.

b. Cut springer bricks to correct angle (line through striking point with string) and set in mortar.

c. Bed voussoirs, working alternately from either side, checking correct angle with string through the striking point.

d. Keep soffit joints clear of mortar for later pointing when arch support is removed.

e. Mortar all bed faces thinly when placing the key brick.

D.P.C's./Formwork

Remember - A cavity tray must be installed above every arch.

- This is achieved in the usual manner when constructing flat or low-rise segmental arches. Semi-circular and bulls-eye arrangements will require a preformed and shaped cavity tray, available from all the specialist cavity tray providers. These can be supplied as a combined dpc and arch support former.
- All cavity trays shall be provided with stop ends, and weepholes formed in the mortar joints to release any trapped water. (min2 per opening).
- All brick arches require temporary support.

