

SPECIFICATION

A spacer for concrete reinforcing bars

This invention relates to a spacer for use particularly in the support of reinforcing bars for reinforced concrete.

Conventionally, when it is desired to produce a slab of reinforced concrete, reinforcing bars are arranged in a mould or within formwork to form a grid. Each bar of the grid is usually independently supported by a concrete block or a chair so that the position of the bar in the finished concrete slab can be controlled at least to a certain extent. However, as the bars form a criss-cross pattern with the bars forming two layers of substantially parallel bars, this mode of supporting the bars does not permit an accurate spacing between two crossing bars to be obtained. Additionally, as it is a common practice for workmen to walk over the grid of reinforcing bars before the concrete is cast, conventional methods of supporting the bars do not prevent the bars from being displaced under the weight of workmen or from bending out of shape. Deformed bars must be straightened before the concrete is cast.

According to the invention there is provided a spacer for use in the support of bars for reinforced concrete comprising a support member of substantially I-shaped cross section such that it is capable of standing on a horizontal surface, a substantially C-shaped clip member being integrally formed at one end of the support member to comprise first means for supporting a first reinforcing bar at a predetermined level with respect to said surface, and aligned part circular apertures being formed in the structure of the I-shaped member to comprise second means for supporting a second bar in juxtaposition to the first bar and at a predetermined spacing therefrom.

Advantages of this spacer over previously used spacers include the fact that the spacer supports at least two bars in predetermined positions in relation to each other and the framework and that the spacer can be arranged to give sufficient support to the bars that workmen can walk over a grid supported by such spacers without dislodging the bars or substantially deforming them.

The invention will now be described by way of example with reference to the accompanying drawing, in which:—

Fig. 1 is a perspective view of an embodiment of a spacer formed according to the invention in use in the support of concrete reinforcing bars;

Fig. 2 is a perspective view of the spacer shown in Fig. 1 from a different angle to that shown in Fig. 1; and

Fig. 3 is a perspective view in the direction of arrow III in Fig. 2.

Referring to the drawing, the spacer shown therein is made in one piece of a resilient plastics material such as polyurethane and comprises a body 1 of upwardly tapering substantially I-shaped transverse cross section. The body 1

thereby comprises two inclined side webs 2 and 3 which are interconnected by a vertical web 4 located centrally between the webs 2 and 3 to define the I-shaped cross-section of the body 1 and by a horizontal web 5 adjoining the upper horizontal edges of the webs 2 and 3 and the web 4. The lower horizontal edges 6, 7 and 8 of the webs 2, 3, and 4 respectively are coplanar and are intended to support the spacer in an upright position on a horizontal surface 9 as shown in Fig. 1.

Formed in a side edge 10, 11 of each of the webs 2, 3 respectively is a part circular aperture 12, 13. The aperture 12, 13 in each of the webs 2, 3 is arranged at the same predetermined level above the lower edges 6, 7 of the webs 2, 3 and is so formed that the portion of the web 2, 3 defining the aperture 12, 13 forms a lip 14, 15 and an inclined lead-in edge 16, 17 for the aperture 12, 13.

Integrally formed with the web 5 is a substantially C-shaped member 18 which comprises a resilient clip. The aperture 19 defined by the member 18 is arranged perpendicularly with respect to an axis passing centrally through the apertures 12 and 13 and is located at a predetermined distance above such an axis.

Although the spacer is made of a plastics material, to lighten the spacer and to save on the material used in the manufacture of the spacer, the web 4 is provided with a series of lightening apertures 20.

In use, the spacer is adapted to stand on a horizontal surface within formwork such as the surface 9 in Fig. 1. Concrete reinforcing bars 21 are supported by the spacer which is adapted to support two such bars 21A and 21B in a perpendicular relationship at a predetermined distance from each other and above the surface 9. The bar 21A is located within the apertures 12 and 13 in the webs 2 and 3 and is effectively retained in the apertures 12 and 13 by the lips 14 and 15 which resiliently clip around the bar 21A as it is pushed into the apertures 12 and 13 by sliding down the lead-in surfaces 16 and 17. The bar 21B is located within the aperture 19 formed by the member 18 which again resiliently clips around the bar 21B to retain it in position. Hence the bars 21A and 21B are retained in juxtaposition to one another and the floor surface 9 and are sufficiently firmly held that their relative positions remain unchanged when concrete is cast around the bars 21. Additionally, if all of the bars 21 are interconnected at suitable intervals by similar spacers, the grid of bars 21 becomes rigid enough to support a man's weight without the bars 21 being dislodged out of their relative positions or substantially deformed.

As in use it may be desired to employ reinforcing bars of various diameters, the apertures 12, 13 and 19 in the spacer are adapted to accommodate a range of such diameter whilst still being able to retain the bars. This is accomplished by the resilient nature of the

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lips 14 and 15 and the clip 18 which can snap fit around bars of several diameter.

Claims

- 5 1. A spacer for use in the support of bars for reinforced concrete comprising a support member of substantially I-shaped cross section such that it is capable of standing on a horizontal surface, a substantially C-shaped clip member being integrally formed at one end of the support
- 10 member to comprise first means for supporting a first reinforcing bar at a predetermined level with respect to said surface, and aligned part circular apertures being formed in the structure of the

I-shaped member to comprise second means for supporting a second bar in juxtaposition to the first bar and at a predetermined spacing therefrom.

2. A spacer as claimed in claim 1, which is made of a resilient plastics material.
- 20 3. A spacer as claimed in claim 1 or 2, in which the first and second means are adapted to support the first and second reinforcing bars at right angles to one another.
4. A spacer for use in the support of bars for reinforced concrete substantially as hereinbefore described with reference to Figs. 1 to 3 of the accompanying drawing.

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Claims

1. A spacer for use in the support of bars for reinforced concrete comprising a support member of substantially I-shaped cross section such that it is capable of standing on a horizontal surface, a substantially C-shaped clip member being integrally formed at one end of the support member to comprise first means for supporting a first reinforcing bar at a predetermined level with respect to said surface, and aligned part circular apertures being formed in the structure of the
- 15 I-shaped member to comprise second means for supporting a second bar in juxtaposition to the first bar and at a predetermined spacing therefrom.
2. A spacer as claimed in claim 1, which is made of a resilient plastics material.
- 20 3. A spacer as claimed in claim 1 or 2, in which the first and second means are adapted to support the first and second reinforcing bars at right angles to one another.
- 25 4. A spacer for use in the support of bars for reinforced concrete substantially as hereinbefore described with reference to Figs. 1 to 3 of the accompanying drawing.

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