TECHNICAL DOCUMENT

MKB DRILLING/INSTALLATION GUIDE

MKB beams are used when four or five beams are required to support a linear or point load that will be built directly off the beams. They work by allowing concrete poured into the channels to flow through the drilled holes, creating composite action and giving greater strength. Fig.A shows a section view of a finished floor; you will see from this the wall is built off the two central beams. The MKB process allows the outer beams to take an equal share of the load created by the wall above.

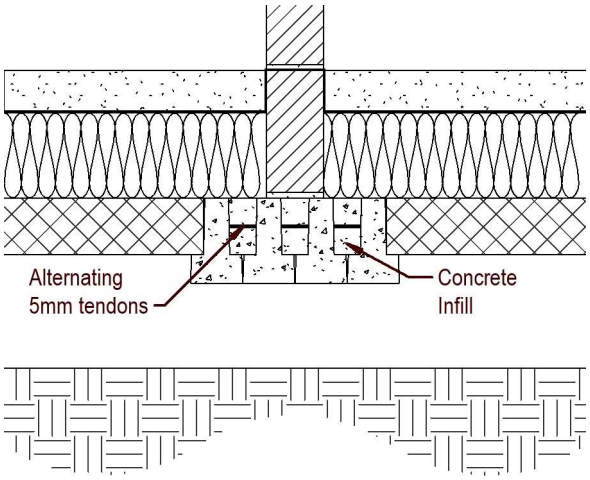

Fig.A

As mentioned above there will be four or five beams in a MKB configuration, for the purpose of this guide we will use four as it is the most common.

Prior to drilling, the beams will be as shown in Fig.B. Either on the forks of the FLT, the ground, or in position on the plot if they have not been drilled prior to leaving the production facility.

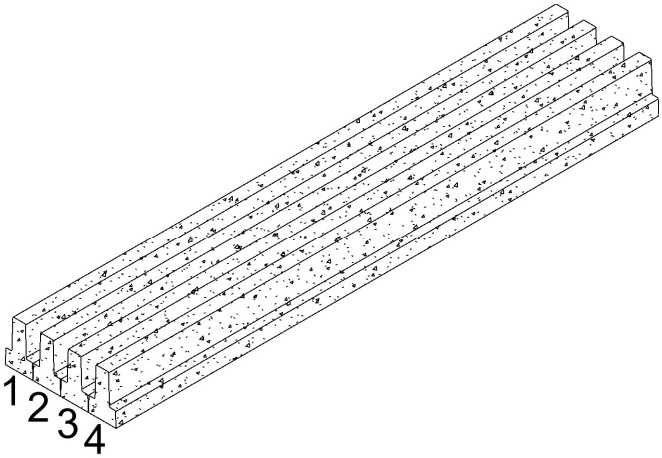

Fig.B

The number of holes drilled in each beam can be gained from the length, i.e., a beam of ≥2000mm but <3000mm requires 2 holes, a beam of ≥3000mm but <4000mm requires 3 holes, etc.

The holes drilled should be done using a 10mm masonry drill bit, 50mm for the top of the beam, this is so the wire tendon in the web is not exposed, and cover is maintained. The distance from the end of the beam should be 500mm for the first and last holes drilled, any between these should be equidistant. The distance from the end of the beam should alternate by 100mm as shown in Fig.C, this helps achieve composite action when concrete is added.

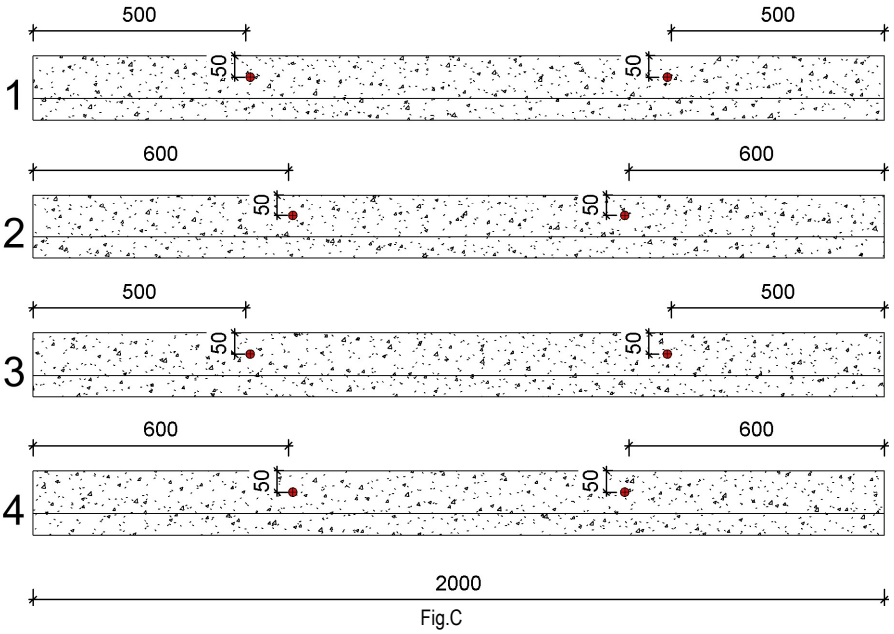

Fig.C

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When drilling is completed the positions of the holes should be as shown if Fig.D when viewed in plan.

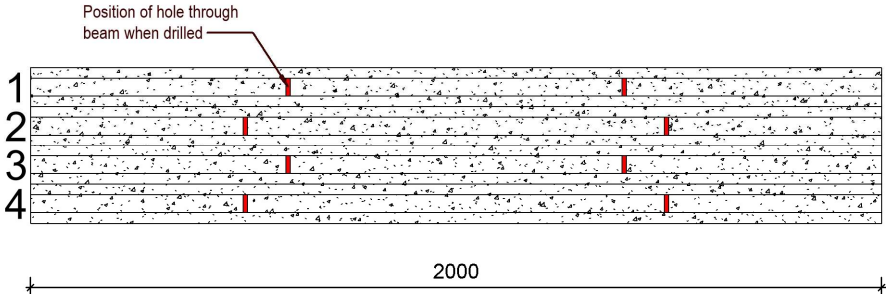

Fig.D

A tendon measuring 80mm in length, with a diameter of 5mm, will be needed for each of the holes drilled. These are cut from the excess wire from the casting process and should be supplied with the beams. If they are not, as a quick fix offcuts of A142mm mesh can be used in its place.

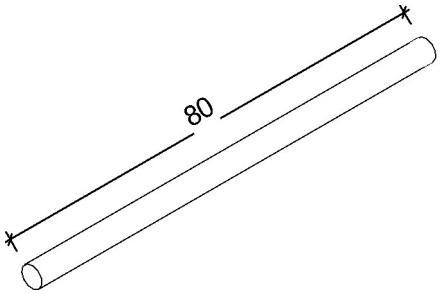

Fig.E

When the beams are in position the wire (shown in green in Fig.G) should be slotted into the drilled holes. Beams 2 & 3 should have the wire located centrally with equal overhang from each side, beams 1 & 4 should have the wire overhanging 40mm into the channels, as a block will be sitting on each of the outer shoulders. Refer to Fig.A for a section view of the wires in place with blocks in place.

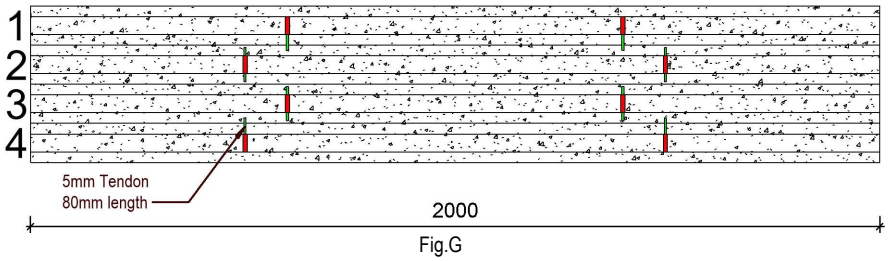

Fig.G

With the tendons in place, concrete should be poured into the channels flowing through the holes drilled, creating composite action. When the concrete has cured the load the beams are required to support can be applied.

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