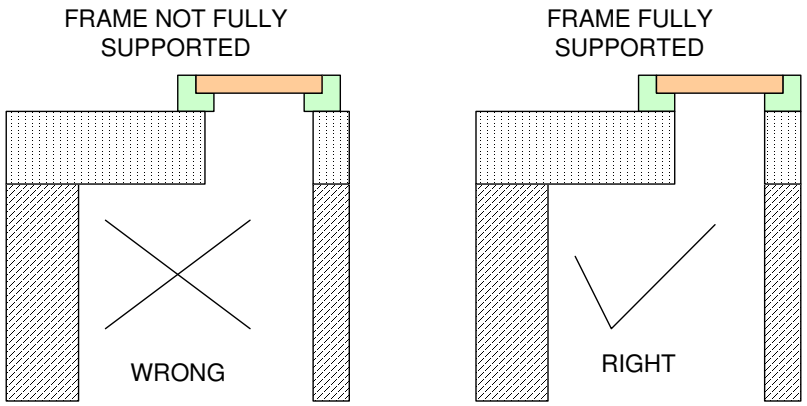
Things to Remember when Installing RCC Manhole Cover & Frame

Do not cantilever the frame

RCC Frame is not built to take on tensile loads. However, it is able to take sufficient compressive loads. Therefore the frame should be fully supported on the support structure, i.e., Chamber walls or Slab. The frame may fail if it is not fully supported.

Figure 1: Specifying the Right size of Manhole Cover & Frame



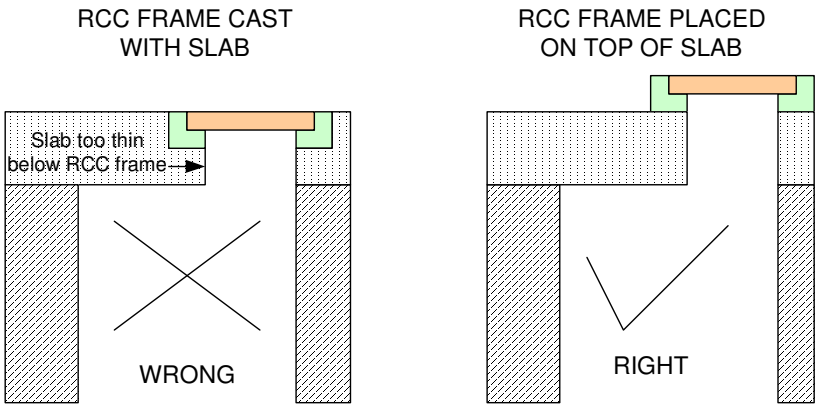
Please ensure that the structure on which the Frame is placed is able to take the load which is expected from the RCC manhole cover

Please note that loads acting on the RCC Manhole Cover and Frame are transferred to the chamber walls or slab on which the frame is placed. Therefore, the support structure (Chamber wall or Slab) should be designed and built to carry the loads. Not doing so may result in failure of the support structure. In some cases this gives an impression that the cover has failed while in reality the support structure buckles or collapses under the load.

Never make the Frame a part of the Slab

In some cases the workmen while making arrangements for the Frame, casts the frame along with the slab (refer to Figure 2). In doing so the thickness of the slab on which the frame is resting is very thin. This will result in failure of the structure as the slab on which the frames rests is not able to bear the load expected of the RCC Cover.

Figure 2: Right and Wrong Way of Casting Slab



Prepare the top of the brick manhole by concrete so as to make it leveled

Often when workmen are constructing a conical manhole from brick, they have a tendency to keep the RCC frame on top of the brick manhole while leaving a big gap between the top surface of the brick manhole and the bottom surface of the RCC frame (refer to Figure 3). They are working with the assumption that eventually the gap will be filled by mortar. In reality, this gap is never filled properly because of the inward slope of the inside surface of the brick manhole. As a result, the concrete filled in the gap will never have perfect contact with the bottom of the RCC Frame. This may result in sheer failure of the frame seating because the frame is not designed to carry tensile loads.

Figure 3: Problem with Construction of Brick Manhole