

## Introduction

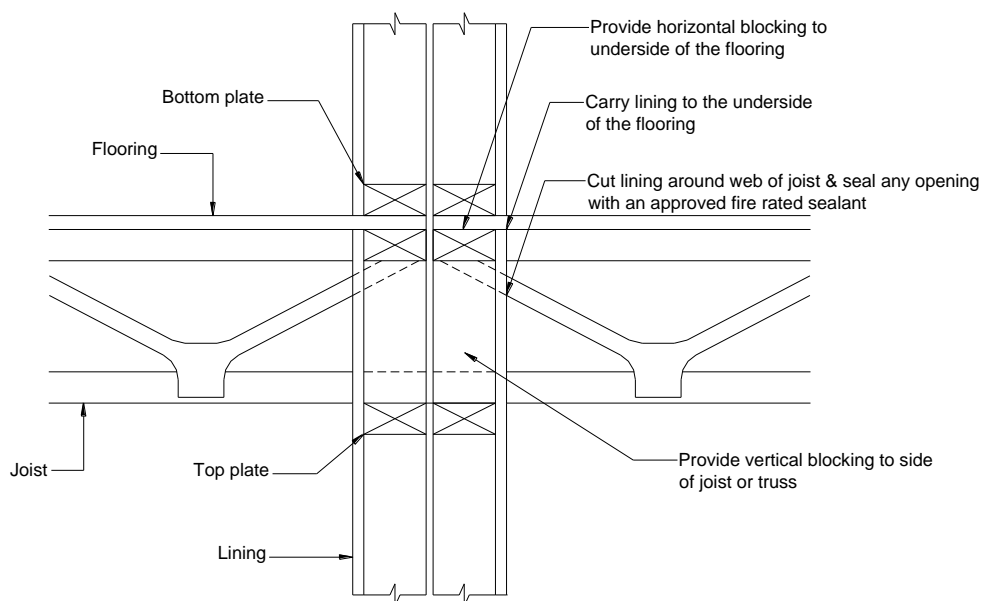
When designing any multi-storey, multi unit, timber framed development, care needs to be taken when detailing fire rated walls adjacent to mid-floors to ensure the integrity of the system and to prevent premature failure. Inadequate design can lead to paths for the flames to penetrate into the wall cavity. This can result in premature integrity and insulation failure as well as structural failure of the wall framing or the floor system supporting the upper level walls.

## Mid-floors

There are many different types of mid-floors. Mid-floors can comprise of solid sawn timber members, Pozistruts, parallel chord trusses, Twinaplates etc. If the mid-floor is required to be fire rated as in the case of different dwelling units above each other, then special care only needs to be taken at the wall/ceiling and wall/floor junctions to ensure adequate fire seals are provided.

If the mid-floor is not required to be fire rated, then the integrity of the fire wall has to be maintained through the floor cavity. The linings are required to be carried through the floor cavity and sealed to the underside of the flooring. Blocking will be required to attach the edges of the sheet to the underside of the flooring and to the sides of the floor members.

To ensure premature failure of the floor members such as Pozistrut and Twinaplate does not occur, wooden framing blocks (similar size to the wall framing members) needs to be placed between the flanges of the members in the area of the wall cavity. The lining needs to be placed hard against the web of the floor member and sealed with an approved fire proof sealant. In the case of Pozistrut floor members, the lining should extend through the centre of the member and be cut around the diagonal steel web. Any small holes should also be sealed with an approved fire proof sealant. Typical details for fire rated wall in the mid-floor region are shown in Figure 1.



**Figure 1**