Plumbing issues

We continue to see a significant number of structural problems caused by the installation of plumbing pipes. By far the greatest problem is the drilling of holes or the cutting of notches into floor joists or top and bottom plates.

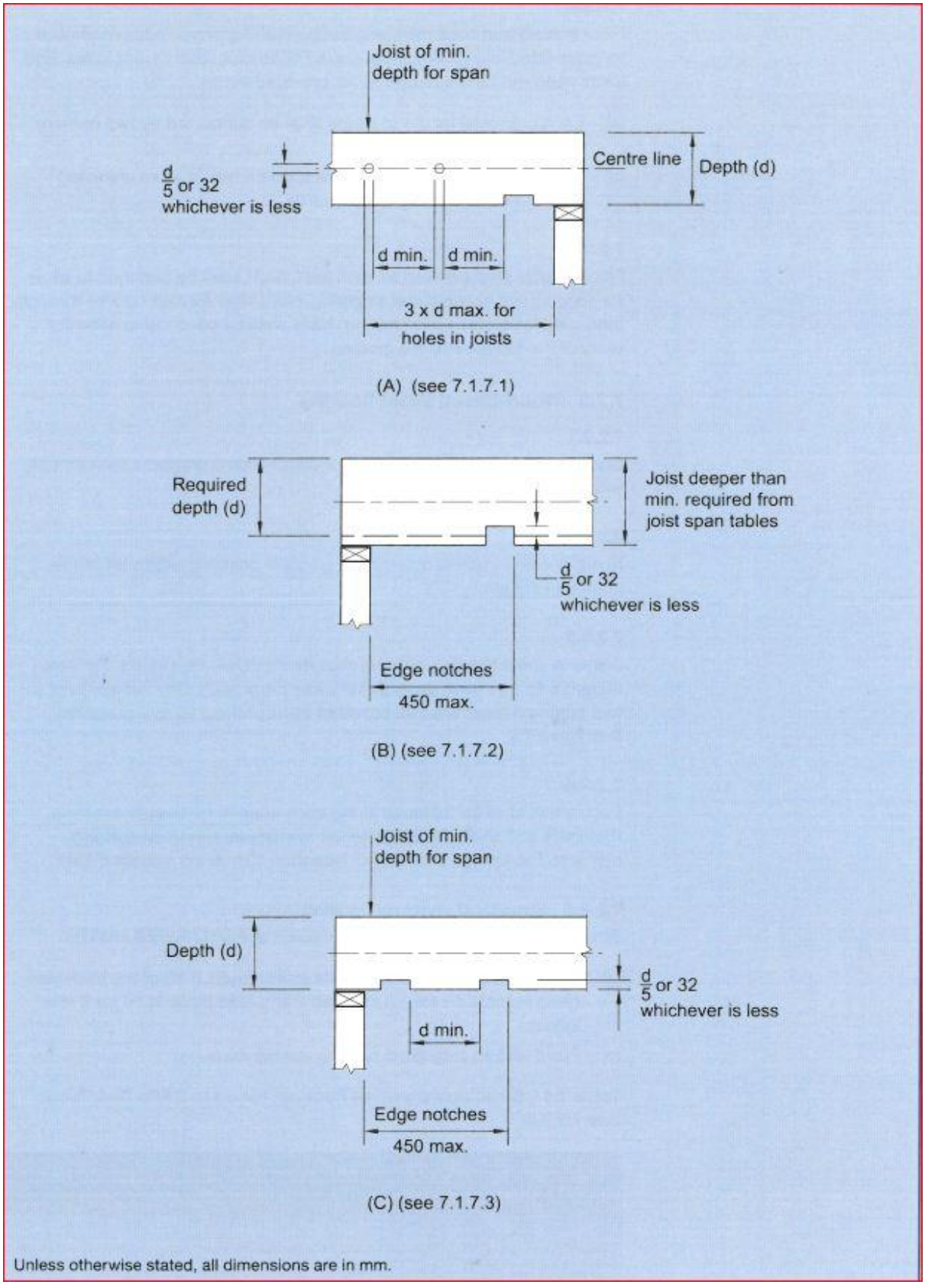
Holes

NZS3604:2011 states that any hole drilled in a joist other than a cantilevered joist be:

- Within the middle third of the depth of the joist; and
- Not more than 3 times the depth of the joist from the face of the support

The maximum diameter of a hole is D ÷ 5 (joist depth divided by 5) or 32mm, whichever is **less**

Refer to NZS3604:2011, figure 7.8 attached



Notches

Notches in floor joists other than those in cantilevered joists shall not be more than 450mm from the face of the support; except that notches that do not reduce the effective depth of a joist are permitted in any position.

Top plates

The size of holes or notches in top plates shall comply with the following dimensions

70 x 45 framing	maximum diameter of hole 19mm maximum depth of notch 19mm; maximum length of notch 200mm
90 x 45 framing	maximum diameter of hole 25mm maximum depth of notch 25mm; maximum length of notch 200mm

Where the size of the hole or notch exceeds these dimensions, the plates must be strengthened.

NB there are some proprietary products available on the market; the above method is similar to figure 8.20 below but is not correct.

Refer to section NZS3604:2011 8.7.5 and figure 8.19 and 8.20 attached

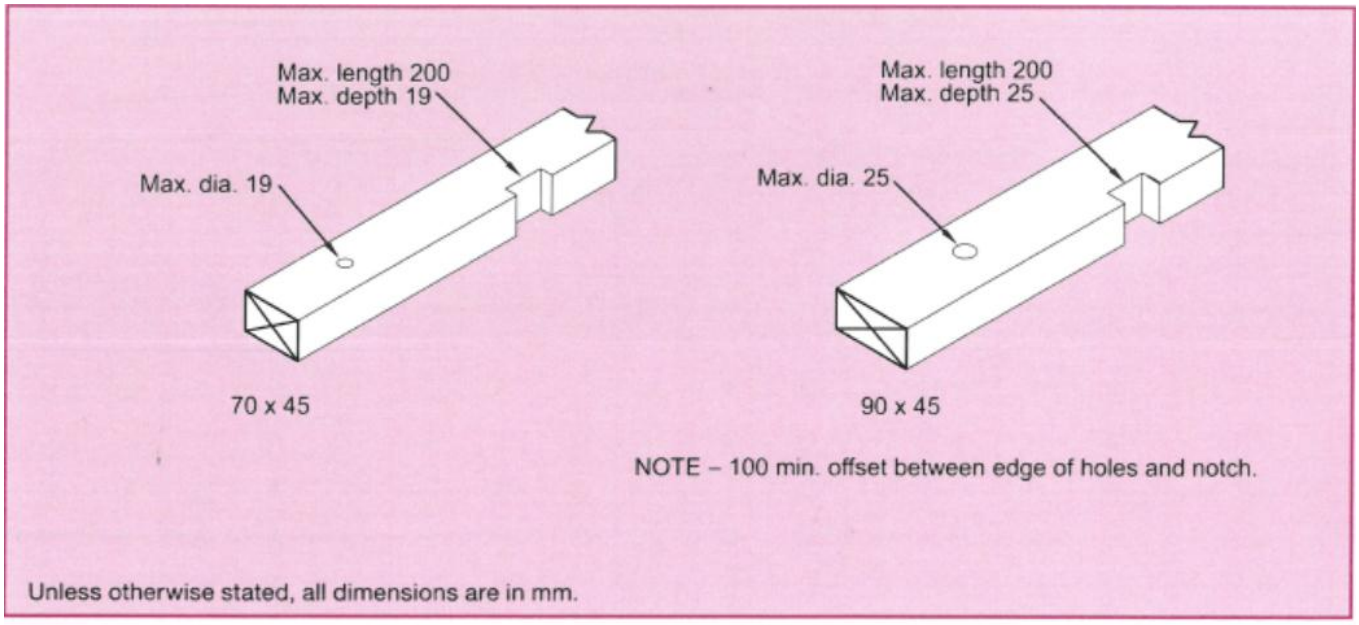


Figure 8.19 – Checking and boring top plates (see 8.7.5.1)

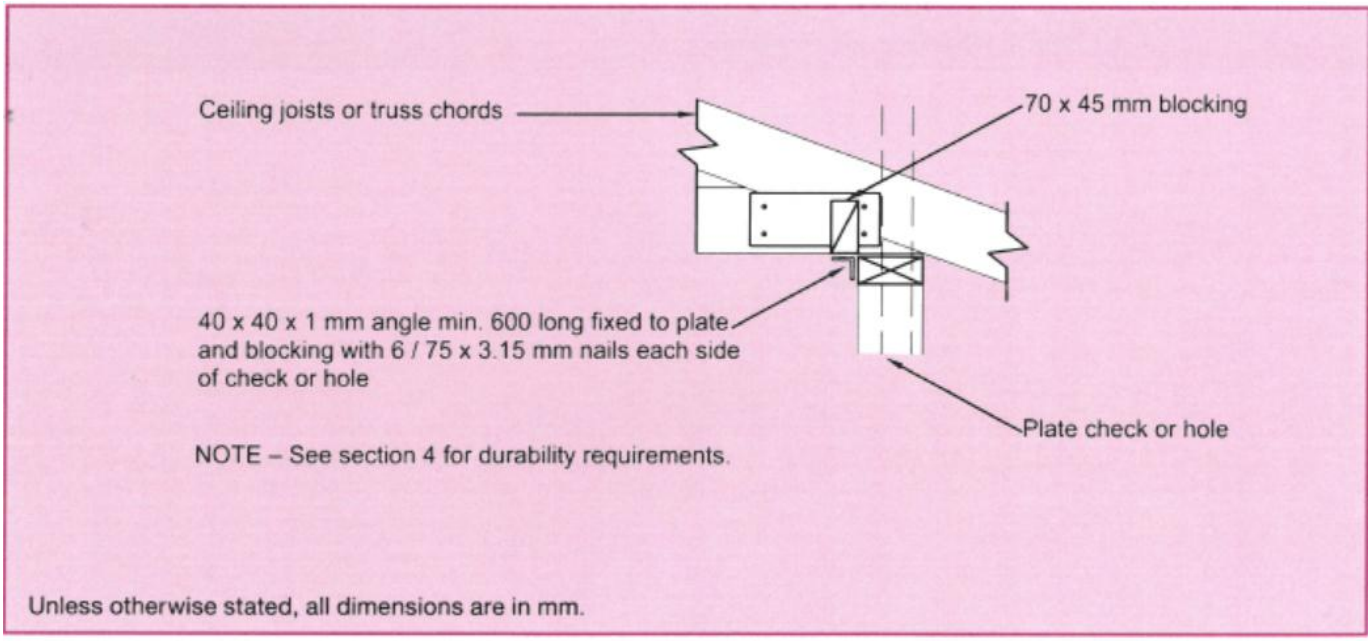


Figure 8.20 – Cut top plate (see 8.7.5.1(c))