



### Pre-Hung Doors - Installation Troubleshooting

A key feature of the Pre-Hung timber door in timber jamb is that installation is quicker and easier than starting from separate components, but there are still things that can go astray to cause the door to be out of whack and leave the installers scratching their heads. Door sets can get tweaked and lose the factory tolerances during transport to site, in on-site storage, and during transport on site. These issues are generally minor and can be corrected during the installation.

Hung-pair door sets are shipped CKD, so if the frame is not assembled on site exactly as it was pre-assembled in the factory the gaps will change. For fire doors, where brush / fin smoke seals on the meeting stile are fitted, the fine tolerances these work to mean that post-installation fine tuning is inevitable to correct either gaps or binding.

But before you even get to that point door installation has its own set of challenges, so here are a few tips to help.

#### Preparation Tips

Trouble can be lurking before you even get to the job!

1. When storage of doors is required before installation the following will assist the avoidance of damage and warping:
  - a. Store in a clean, DRY area
  - b. Stack doors horizontally on a minimum of three good gluts of equal thickness. NEVER store pre-hung door sets or door leaves angled against a wall.
  - c. While the doors are in storage it is a good time to consider having the bottoms of the leaves painted ... much smarter than trying to do this with the door installed!
2. Ensure the wall opening is clear with no overlapping gib or protruding nails that will mess with your efforts.
3. Check for twisted or misaligned studs and correct if necessary.
4. Check that the opening is in plumb in all directions, including the floor, so you know in advance if some challenges are heading your way. Uneven concrete floors can really spoil your day so use a spirit level to ensure that there will be sufficient clearance for the entire sweep arc of the door. If it won't clear you'll have to take a grinder to the floor because NZS5420 specifies the floor gap of the closed door at 10mm (plus thickness of floor covering, to a maximum of 25mm over FFL).



5. Check that the correct door set is selected for the opening and, if leaf and jambs have been separated on site, that the correct leaf and jamb sets are presented for installation. NZFD door leaves have the number written on the head, and jambs have paper labels identifying the part. Hung pairs will have been factory pre-hung then disassembled and flat-packed for shipping. Care is required to ensure that the jambs and BOTH leaves all match.

### Installation Tips

*IMPORTANT: Follow the specific installation instructions supplied with your fire doors to ensure your installation meets the criteria for issue of Certification Tags.*

1. Two carpenters are better and quicker than one! With one carpenter each side of the door all aspects of the job can be sighted simultaneously so the person fixing the frame can be guided from the unsighted side whether to adjust or fix.
2. Start at the hinges. Shims are placed just under the top and bottom hinges. When the jamb is plumb nail or screw the jamb at the shims. Speed squares on both sides verify that the jamb is flush with the gib (architrave finished installation)
3. Remove any straps / packing securing the leaf and jamb together for transportation. The door will now operate as dictated by the position of the hinge jamb.
4. Check the head. If the gap is consistent across the head jamb, proceed to the strike side.
5. Establish the gap at the strike side. Shim the strike side at the top, behind the strike plate, and at the bottom. Check the gap and nail or screw off the jamb. Don't forget to check the swing, too. When the door is closed, it should hit the stop evenly down its length. *Note that stops on NZFD timber doors are tacked in place to allow the option to blind fix the jambs under the stop, and that a 4mm gap must exist between the stop and the leaf to fit the seal rubber.*

### Troubleshooting

**PROBLEM: A bowed jamb above the top hinge creates a gap that's too tight on the strike side.**

**SOLUTION:** Drive shims at the hinge side of the head jamb until the gap is equal. Although this tight gap is more common on the hinge side, you can also use this solution to open the gap on the strike side.



**PROBLEM: The gap at the head is too tight on one side.**

SOLUTION: Raise the jamb on the tight side with a flat bar until the gap is even.

**PROBLEM: The gap at the head is too big on one side**

SOLUTION: Lower the jamb on the wide side after trimming the bottom with a reciprocating saw

**PROBLEM: The door does not close evenly against the stop. (Jamb legs are out of alignment)**

SOLUTION: Reposition the jamb legs so they are aligned, if possible, within the tolerances afforded by the wall. If the wall is out of alignment consideration might be given to adjusting the bottom plate. As a final resort, fit the stops to meet the leaf, remembering to allow 4mm gap for the smoke seal.

**PROBLEM: The door does not close properly because the hinges are binding**

SOLUTIONS:

1. First check that all screw heads in both leaf and jamb are sitting flush and fully home in their countersinks. Correct as necessary.
2. Check that the leaf is not binding on the smoke seal. Ensure that the seal is fully engaged in the slot behind the stop all the way around. If the seal is fitted correctly and binding on the seal still occurs insufficient clearance has been allowed for the smoke seal the stops must be removed and refitted to the correct position
3. If steps 1 and 2 fail to remedy the binding and the hinge side gap is less than 2.5mm, the hinge side gap may need to be increased. Starting with the BOTTOM hinge, either
  - a. Place a steel packer (available from NZFD) under each jamb-side hinge leaf or
  - b. Place the long side of a 4mm hex key (5mm MAX!) against the inside of the hinge knuckle and carefully close the door against the key, applying sufficient pressure to open the hinge gap.

**PROBLEM: The door does not close because the hinge side gap is too large**

SOLUTION: Starting with the TOP hinge, remove the hinge and squeeze the hinge gap closed in a vice, then return the hinge to the door. Evaluate the result before proceeding to the next hinge.