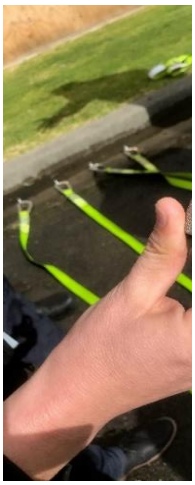
Hose Testing– Quick Guide.

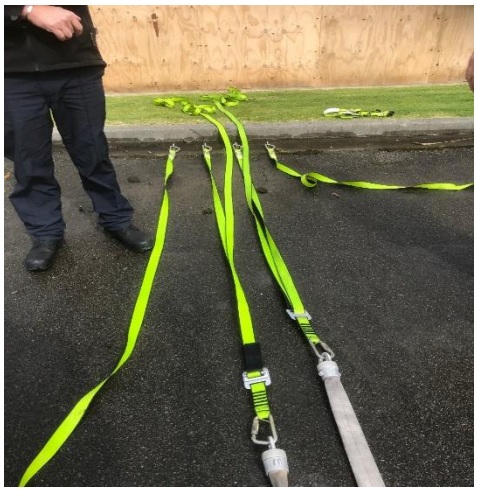
Procedure using Hose Manifold (Test-Rig)

1. **Safe work area for hose testing.**

- Place **WARNING** signage to keep test area clear of unnecessary personnel. This should allow for a minimum 10 metre clearance from hose being tested, or behind a significant barrier i.e. the tower, a wall or other building.
- **Absolutely no personnel to be in the test zone while pressure testing.**
- All testing personnel must wear appropriate PPE, minimum of safety boots, gloves and helmet.

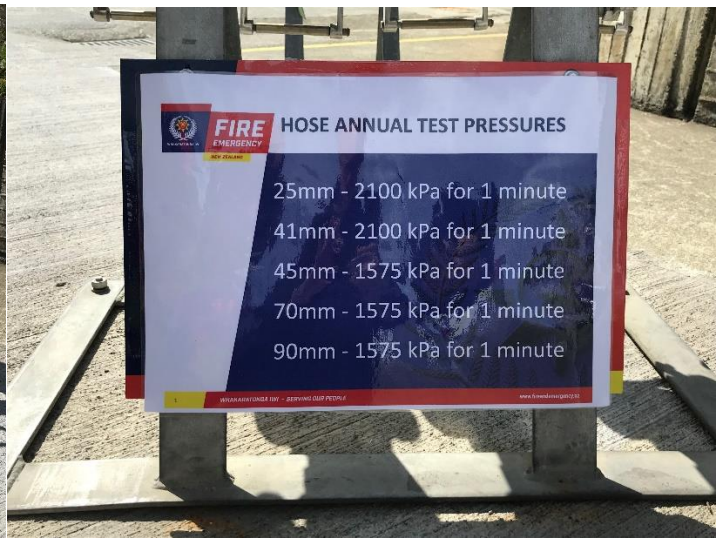
- Visually check tethers, carabiners, adaptors and anchor points for any damage or wear and tear – (this is an example of tethering equipment)



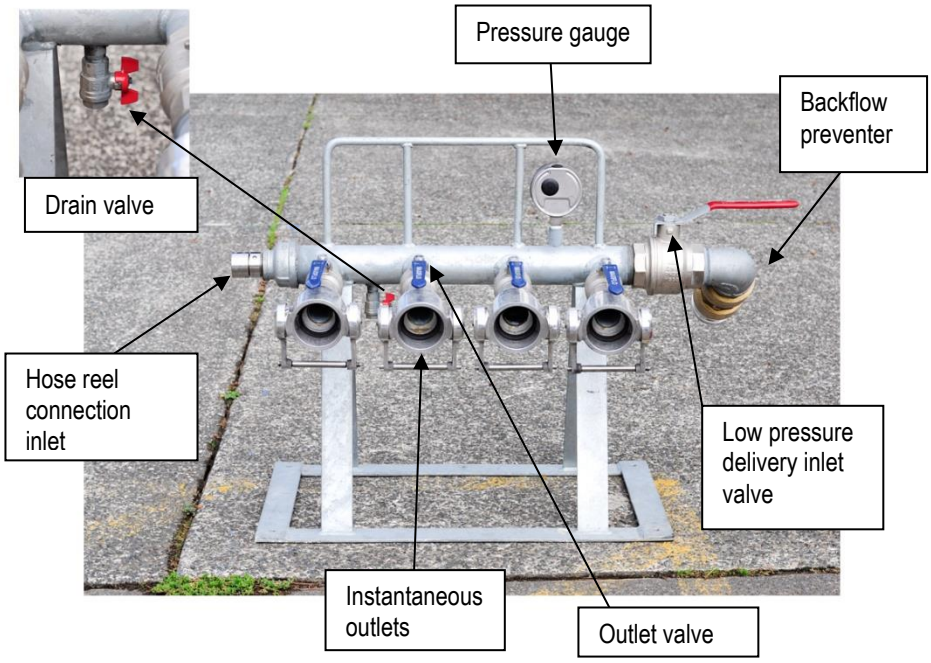


2. Connecting up to the hose test-rig.

- Visually inspect hose test-rig for any physical wear and tear or damage, check all valves open and close correctly, the *pressure gauge* is readable, and the *hose test pressure signage* is in place. (Example below)



- Run a high pressure hosereel from the testing pump to the test-rig.
- Remove the branch from the hosereel tubing and attach the tubing to the *hose reel connection inlet* on the test-rig.
- Connect a low pressure (70mm) delivery from either a stand pipe or the testing pump to *the low pressure delivery inlet* on the test-rig. This inlet **MUST be fitted with a Backflow Preventor** as shown in the diagram.
- **SAFETY NOTE –** If connecting the feed from a pump, connect from the offside outlets to give the pump operator maximum protection in the event of a hose failure.



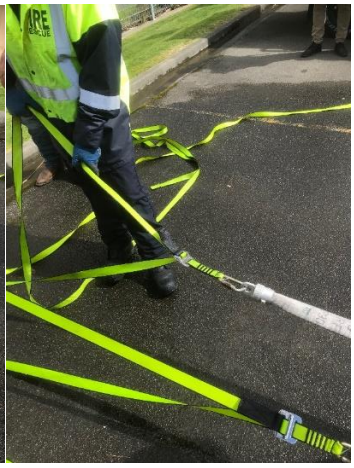
- Ensure the *drain valve* is closed.

- Connect the hose to be tested to the test-rig, either directly into the instantaneous coupling, or for hoses with screw-type coupling, using adaptors. Check couplings for wear and tear or damage and **run the test hose out in a straight line with no bends or kinks up to a maximum of 30 metres** length. (short feeds etc can be connected to 30m max so long as a straight line is achieved)

3. Tethering of hose

- Connect tether to anchor point (example below)
- Connect the appropriate adaptor to the test hose coupling and attach the tether to the coupling adaptor.
- Tension up the tether to pull the test hose straight.





4. Clear the hose test area

- Clear the area of all personnel to a distance of at least 10 metres from the test hose, or behind a significant barrier i.e. the tower, a wall or other building. The pump operator should be at a safe distance behind the test-rig operating the pump.
- Put Safety Officer/s in place to ensure no one approaches the area while testing is underway.

5. Commencing hose testing

- Pump operator checks with Safety Officer/s that it is safe to commence test.
- Pump operator opens delivery/stand pipe and fills test hose until all air is expelled.
- Once the test hose is filled, close the *low pressure delivery inlet valve* on the test-rig**. Failure to do so may result in the failure of the back flow preventor or the feed hose!**
- Check for obvious leaks, if any are present isolate the water supply at the test-rig and mark the hole or remove the hose from the test if necessary. Make up and replace the length on the test-rig.
- If there are no obvious leaks, **slowly** raise the hose reel pressure increasing the pressure in the test hoses until the appropriate test pressure is reached. **This should take 2 – 3 minutes and not exceed 700 kpa per minute.**
- Once test pressure is achieved – hold there for at least 1 minute.

6. Leaks or hose failure

- If a leak or burst occurs while the test hose is under pressure **DO NOT APPROACH** until the pressure is reduced to below 500kpa.
- Visually observe the area of the hole or leak until it's safe to approach then mark the hole, make up the hose and set aside for repair or assessment.

7. Hose test complete

- Release the pressure to the test hose – **DO NOT APPROACH** until it is safe to do so.

- Open the drain valve on the test rig.
- Release tethers.
- Make up hose.

Procedure for testing straight off a Fire Appliance

- **Safety note:**
  If an appliance's low-pressure delivery valves are used in the fully open position, the large volume of water can result in a highly hazardous hose burst. For this reason, manufacturers recommend that FENZ appliance pumps should not be used to test lay-flat hoses.
  Therefore it is essential that if you are using an appliance pump that you strictly adhere to the following procedure.

8. Set up the Safe Work Area for hose testing as in Step 1

- Connect the lay-flat hose/s to be tested to the **off-side** pump outlet/s, if using a mid-mounted pump.
- **Hoses should be laid out in a straight line with no kinks or bends to a maximum length of 30 metres.**
- Short feeders may be connected up to a maximum length of 30 metres in a straight line with no kinks or bends.
- Connect a controlled branch to the female end of the hose/s under test and attach to a fixed branch holder or suitably anchored tether. In some cases, a blank coupling (with a small hole to allow air to escape and maintain a small water flow) or similar device, may be used instead of a branch.
- **Safety Note:**
  If a fixed branch holder is not available, the branch must be securely tethered throughout the test as shown in the example in Step 3.

9. Commence hose testing

- Pump operator checks with Safety Officer/s that it is safe to commence.
  Pump operator opens the delivery and fills test hose allowing water to pass through the branch until all air is removed from the hose line.
  The branch should be closed slowly to restrict the water flow to a trickle.
- All personnel move to a safe distance of at least 10 meters from the test hose, or behind a significant barrier i.e. the tower, a wall or other building.
  Advise the pump operator that it is safe to start the test.
- Check for obvious leaks, if any are present isolate the water supply at the pump and mark the hole or remove the hose from the test if necessary. Make up and replace the length.
- If there are no obvious leaks, slowly raise the pressure increasing the pressure in the test hoses until the appropriate test pressure is reached. **This should take 2 – 3 minutes and not exceed 700 kpa per minute.**
- Once test pressure is achieved – hold there for at least 1 minute.

10. Leaks or hose failure

- If a leak or burst occurs while the test hose is under pressure **DO NOT APPROACH** until the pressure is reduced to below 500kpa.
- Visually observe the area of the hole or leak until it's safe to approach then mark the hole, make up the hose and set aside for repair or assessment.

11. Hose test complete

- Once the hose test is complete
- Release the pressure to the test hose from the pump through the tank to pump – **DO NOT APPROACH** the test hose until it is safe to do so.
- Release the tethers.

- Make up the hose.

Hoses that do not pass the pressure test should be withdrawn from operational service and sent for assessment. Assessment determines whether to repair or decommission the hose.