**Observation**

Inspection was undertaken at the subject property in the presence of the Insured to which the following was noted:

## Provided Advice

1. From our onsite discussions with the Insured, the following was advised:
2. The Insured first noticed a gradual increase to their water bill over a period of approximately nine (9) months.
3. Finally, the Insured advised there was a significant increase to their water bill after the gradual increase, to which the Insured engaged a plumber to investigate the cause of the increased water bill.
4. The plumber undertook invasive investigation works within the bathroom to which it was found that hot water pipework embedded within the bathroom slab was leaking.
5. Subsequently the plumber installed new pipework between the hot water unit and internal water services, making existing leaking pipework redundant.
6. The plumber also undertook inspection within the subfloor and noted that the subfloor was wet.
7. We acknowledge receipt of the following invoices from Alltrades Contracting Services PTY LTD:
8. Invoice No. 00410166 dated 11-10-2021, for leak detection works.
9. Invoice No. 00410478 dated 14-10-2021, for the installation of new pipework.
10. During our inspection, the Insured alluded to damage throughout the property which has been claimed to be a result of the subject leaking pipe, which has been outlined below.

## Observations

1. The following is to be read in conjunction with the provided Schematic Floorplan of the subject property provided under ***Appendix A***.

### Bathroom

1. From inspection within the Bathroom, we noted the following (**Images 2 – 7**):
2. Partial demolition of the bathroom tiles in facilitating the pipework reinstatement.
3. Partial demolition of the bathroom wall render in facilitating the pipework reinstatement.
4. Removal of the bathroom vanity in facilitating the pipework reinstatement.
5. Moisture damage to the wall render and paintwork to the bathroom partition walls (dining room side of the bathroom).
6. High moisture content & wet rot damage to the bathroom door architraves.

### Dining Room, Bedroom 3 & Bedroom 4

1. From inspection within the Dining Room, Bedroom 3 & Bedroom 4, we noted the following:

*Dining Room*

1. Moisture damage to the wall paint and render, mainly about the partition wall between the Dining room and Bedroom 3 & Bedroom 4. **Images 9 – 10**
2. High moisture content and wet rot damage to the architraves and skirtings within the Dining room. **Image 11**

*Bedroom 3*

1. Moisture damage to the wall paint and render including mould growth to the wall render, mainly about the partition wall between Bedroom 3 & Dining room and Bedroom 3 & Bedroom 4. **Images 12 – 14**
2. High moisture content readings to the render within Bedroom 3. **Images 15 – 16**
3. Mould spots to the cornices and wall, mainly about the external wall of Bedroom 3.

**Images 17 – 18**

*Bedroom 4*

1. Moisture damage to the wall paint and render including mould growth to the wall render, mainly about the partition wall between the Bedroom 4 & Dining room. **Images 19 – 20**
2. Wet rot and high moisture content readings to the skirting within Bedroom 4. **Images 21 – 22**

*Bedroom 1*

1. The sliding door servicing the built-in wardrobe within Bedroom 1 has reduced functionality. **Images 23**

### External

1. From external inspection of the subject property, we noted the following:

*Eastern Elevation (****Image 24****)*

1. Damage to render in facilitating the pipework reinstatement. **Image 25**
2. Cracking within the render on the Eastern elevation, inclusive of cracking propagating from the Kitchen window. **Images 26 – 28**

*Front Patio*

1. Cracking to the pebblecrete finish about the front patio floor and stairs.

**Images 29 – 30**

1. Cracking to the pebblecrete finish about the front entry door. **Image 31**
2. Separation and cracking between front patio and dwelling, resulting in delamination of render. **Image 32**
3. Separation and cracking between the Front Patio balustrade and main dwelling. **Image 33**

### Subfloor

1. From inspection within the subfloor, we noted the following (**Images 34 – 36**):
2. Subfloor was in a damp state.
3. No evidence of any damp proof course (DPC) within the brickwork to mitigate rising damp.
4. Fretting to brickwork.
5. From the Insureds provided imagery, we also noted that the floorboards adjacent to the bathroom were moisture affected. **Image 37**

**Discussion**

## Proximate Cause of Damage

### Bathroom & External Wall Adjacent to Bathroom

1. It is clearly evidence that in facilitating the investigation and reinstatement of leaking plumbing that the bathroom required partial demolition.
2. As such, we consider that the removal of tiles and render within the bathroom was required in facilitating investigation and replacement of the leaking pipework.
3. Given the above, we confirm that in ensuring warrantable reinstatement of the bathroom, that all tiles will be required to be removed in facilitating the waterproofing replacement.
4. In addition to the above, we also noted that the render about the Eastern external wall had been damaged in facilitating the reinstatement of new pipework, which will be required to be reinstated and painted.

### Moisture Damaged Render & Wet Rot to Architraves & Skirting

1. From review of the moisture damage to the paintwork and render, and wet rot to the architraves & skirtings about the Dining Room, Bedroom 3 & Bedroom 4, we note that the damage does not appear fresh in nature and has evidently been occurring over an extended period of time in years.
2. The high moisture content readings undertaken clearly indicate that there is a rising damp issue within the brickwork.
3. We also confirm that we did not observe any damp proof course provisions within the subfloor to mitigate rising damp.
4. We further noted fretting to brickwork within the subfloor area consistent with long-term rising damp and moisture exposure indicating on-going rising damp issues.
5. Given the above, in our opinion, the moisture damage to the paintwork, render and wet rot to skirting and architraves as outlined within this report is a result of long-term rising damp due to omission or defective damp proof course and pre-dates the subject leaking pipe event.
6. As such, the rising damp damage is considered unrelated to the subject leaking pipe event but rather a result of inherent construction issues.

### Mould Spots Within Bedroom 3

1. We note that the mould spots within Bedroom 3 was evident on the mainly about the external wall.
2. We further consider that the mould spots are outside of the zone of influence of the subject leaking pipe.
3. Based on our observations, in our opinion, the observed mould spots within Bedroom 3 is consistent with long-term moisture ingress within the eaves adjacent to Bedroom 3 and insufficient ventilation within Bedroom 3 and pre-dates the subject leaking pipe event.
4. Given the above, we consider that the mould spots within Bedroom 3 is unrelated to the subject leaking pipe event.

### Bedroom1 Built-in Robe Sliding Door

1. From inspection of the ceiling lining and wall lining adjacent to the built-in robe, we confirm we did not observe any indication that the underlying footings has undergone movement due to moisture within the subfloor area caused by the leaking pipe.
2. In our opinion, the reduced functionality of the built-in robe sliding door is consistent with long-term general wear and tear and is unrelated and pre-dates the subject leaking pipe event.

### Cracking to the Eastern Wall

1. From review of the external brickwork and render, we confirm that we did not observe any control joints to allow for on-going thermal movement within the brickwork and render.
2. The observed crack pattern is consistent with long-term thermal movement within the underlying brickwork and render and omission of sufficient control joints to account of on-going thermal movement.
3. As such, in our opinion, the external cracking to the eastern wall is unrelated to and pre-dates the subject leaking pipe event.

### Cracking to the Front Patio Floor

1. From our review of the Front Patio floor cracking, the face of the cracking does not appear fresh and has evidently occurred over an extended period of time in years.
2. The pattern and mechanism of the observed cracking is consistent with ***plastic shrinkage cracks***.
3. ***Plastic shrinkage cracking*** results in the concrete when poured and subsequently not controlled during the curing process. This is evident with the three-branch intersecting cracking configuration which was present.
4. This type of crack formation indicates rapid loss of water due to evaporation rate exceeding the bleeding rate.
5. In our opinion, **the observed cracking within the front patio pebblecrete surface is a pre-existing damage which resulted from poor concrete curing at the time of construction**, unrelated to any defined insurable event or the leaking pipe event.
6. As such, in our opinion, the observed cracking to the patio floor is consistent with inherent construction issues and concrete shrinkage cracks and is unrelated to and pre-dates the claimed leaking pipe event.

### Separation and Cracking Between the Front Patio & Dwelling

1. From our review of the Front Patio separation and cracking, the face of the cracking does not appear fresh in nature and has evidently occurred over an extended period of time in years.
2. We note that the main dwelling and front patio are supported off differing footing systems.
3. In addition to the above, from review of historical Google Street View imagery of the property, we noted between 2009 and 2021 that vegetation planted adjacent to the patio had increase significant in size.
4. From review of the separation and crack pattern, in our opinion, the separation and cracking is a result of long-term and gradual differential movement and subsidence due to differing footing systems and foundation movement caused by long-term vegetation growth adjacent to the patio.
5. Given the above, the separation and cracking between the front patio and dwelling is considered unrelated to and pre-dates the claimed leaking pipe event.

### Subfloor Dampness

1. We note that the subfloor was in a damp state at the time of our inspection.
2. In our opinion, the subfloor dampness is due to the omission of sufficient subfloor ventilation, to which the dampness has been exacerbated by the subject leaking pipe event.
3. Notwithstanding the above, we consider that the subfloor will return to normal moisture levels within 6 – 12 months.
4. However, we recommend that the subfloor ventilation be upgraded through the installation of additional vents and/or installation of a mechanical ventilation system.

### Brickwork Fretting

1. The observed brickwork fretting within the subfloor is consistent with omission or defective damp proof course and long-term rising damp.
2. Given the above, in our opinion, the brickwork fretting is a result of inherent construction issues and is unrelated to and pre-dates the subject leaking pipe event.

### Moisture Affected Floorboards

1. From review of the provided imagery, we noted that the floorboards are evidently moisture affected adjacent to the bathroom.
2. With consideration to the wet rot to the bathroom architraves and skirting boards adjacent to the bathroom, there is evidence of previous waterproofing failure within the bathroom.
3. Based on the above, in our opinion, the observed water staining is consistent with long-term gradual moisture ingress due to bathroom waterproofing failure and is unrelated to any one-off or insurable event.

**Conclusion**

In summarising the observed damage and proximate causation, we provide the following table.

| **Location** | **Observed Damage** | **Proximate Causation** | **Is the damage considered related to the leaking pipe event?** |
| --- | --- | --- | --- |
| Bathroom | Damage to wall tiles and render. | Damage is consistent with facilitating investigation and repair of the subject leaking pipework. | Yes |
| Dining Room, Bedroom 3 & Bedroom 4 | Moisture damage to paintwork & render and wet rot affected skirtings and architraves. | Long-term rising damp within the brickwork due to omission or defective damp proof course, consistent with the high moisture readings observed. | No |
| Bedroom 3 | Mould spots on wall and cornices, mainly about the external wall. | Overflowing guttering and moisture ingress into the eaves causing a high-moisture environment about the external wall of Bedroom 3, and insufficient ventilation. | No |
| Bedroom 1 | Built-in robe sliding door reduced functionality | Long-term general wear and tear of the sliding door hardware. | No |
| External Eastern Wall | Damage to render about new pipework. | Damage is consistent with the installation of new pipework to replace leaking pipework. | Yes |
| External Eastern Wall | Cracking to the external render. | Omission of sufficient control joint provisions within the render and brickwork to account of long-term thermal movement within the brickwork and render. | No. |
| Front Patio | Cracking to the patio floor pebblecrete | Shrinkage crack forming at the time of construction which has gradually increased overtime with on-going shrinkage of the concrete substrate. Cracking does not appear fresh in nature and is not consistent with the subject leaking pipe event. | No |
| Front Patio | Separation and cracking between the patio and dwelling | Long-term differential movement and settlement due to differing construction types and footing systems and long-term vegetation growth adjacent to the patio. Cracking does not appear fresh in nature and is not consistent with the subject leaking pipe event. | No |
| Subfloor | Fretting of Brickwork | Omission or defective damp proof course allowing rising damp within the brickwork resulting in the observed fretting. | No |
| Subfloor | Moisture within subfloor | Poor subfloor ventilation allowing water to become entrapped within the subfloor, which has been exacerbated by the subject burst pipe event. | Exacerbated by the leaking pipe, however no resultant damage |
| Subfloor | Moisture affected floorboards | Failure of bathroom waterproofing allowing water to ingress about the adjacent floorboards. | No |