Cosmetic Imperfections

Be very careful in identifying breaks, fractures or cracks. Marks on the inside of the pipe may only be cosmetic imperfections on the inside surface. These marks are commonly caused by handling with a forklift, residual water lines from cleaning, or sewage flow marks. These have, on occasion, been mistaken for cracks or fractures.

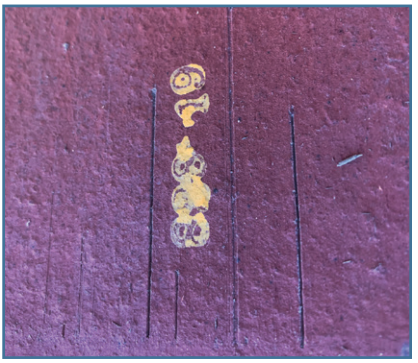

Figure 27: Cosmetic Imperfection (caused by extrusion marks)

A crack will always start at the end of the pipe section and can be confirmed with a Low-Pressure Air Test of the line or can be seen via CCTV with water seepage marks.

Figure 28 shows a piece of excess clay that fell from the pipe end trimmer/ finisher and was stuck/ pressed to the inside of the 6-inch pipe wall. This happened after the pipe was extruded and before it was kiln fired. After firing it was permanently bonded.

The thickness is less than $^{1}/_{16}$-inch but the lighting and the camera really exaggerates the blemish as it wasn't noticeable with the naked eye.

Figure 28: Surface imperfection created during extrusion

Figure 29 shows polyurethane material that ran down inside the pipe when the bell gasket was poured during manufacturing. Each pipe section stands on end vertically while the bell gaskets are poured within a mold inside the pipe bell. This material spill was missed and didn't get cleaned off before the pipe was shipped, installed and inspected.

Crazing (also referred to as surface shrinkage, surface checking, firing checks or drying checks) is a common manufacturing condition on the surface of the pipe. This can occur on the inside surface of the barrel during the trim/chamfer process or on the outside of the barrel where the bell meets the body of the pipe. It does not affect the performance of the pipe in any way.

Figure 29: CCTV image of polyurethane gasket overpour

Crazing is a surface blemish that can occur anywhere on the pipe surface. It can be highly exaggerated by the CCTV light source and camera magnification during inspection.

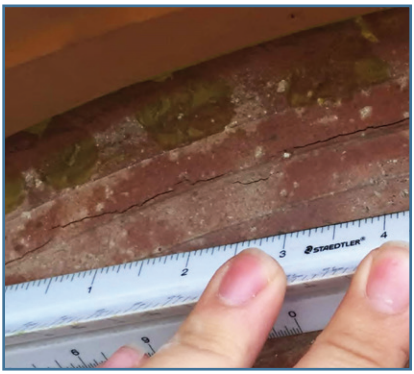

Figure 30: Crazing (pictured here) is common,but it has also been misidentified as a fracture or crack.

All of these conditions are cosmetic imperfections and will not affect the performance or integrity of the pipeline or joint system. Fractures as compared to cosmetic imperfections, go all the way through the pipe wall. They will almost always start at one end of a pipe section.

If there are any questions about possible cosmetic imperfections, please contact the pipe manufacturer or conduct a Low-Pressure Air Test.