

SHAFTS

How the Mine workings are accessed.

The Mine at Winsford has always been serviced by vertical shafts. As discussed in the history section the original shafts, 1 and 2, were installed in 1844 and continued to elevate the bulk of production, despite the sinking of 3 Shaft in 1941. Amazingly, 1 & 2 Shaft remained in use for nearly 130 years before being sealed and grouted in the 1970s. The original shafts were ultimately replaced by 3, 4 & 5 Shaft.

No 3 Shaft – personnel access.

No 3 Shaft, as with all the subsequent shafts, is circular in cross-section. The shaft was originally brick-lined but was later reinforced with a concrete lining. The diameter is 3.05 m (10ft) and the depth, including the sump, is 163m (550 ft) although the decking level is around 150 m (500 ft).

No 3 Shaft is currently used for personnel access but the original lift has been upgraded. The original comprised two double-deck cages operating in balance running on steel rail guides and driven by a single-drum, manually controlled winding engine. The lift was replaced in the 1970s by a fixed self-service lift, similar to a car park lift. It is unusual to find a fixed lift cage in a mine but the stability of the rock salt at Winsford affords us this luxury.

The lift takes approximately one minute to descend.

No 4 Shaft – ventilation and material access.

No 4 Shaft, installed in 1963, is the downcast shaft situated one mile away from 3 Shaft. The shaft is significantly larger, measuring 4.88m (16ft) in diameter, and has a concrete lining. The total depth of the shaft is 189m with the decking level situated at 183m. The lift consists of a cargo compartment (lower), measuring 7 metres in height, 2.4 metres in width and 4 metres in depth, with a personnel carrier (upper). The lift takes approximately five minutes to descend.

No 4 shaft serves as the principal service shaft, by means of which the majority of underground equipment and materials are brought into the Mine. All major mechanical items for use underground are dismantled into suitably sized component sub-assemblies at the surface and placed into the cargo compartment via transit capsules, forklift trucks or hoisting

Once the equipment arrives at the base of 4 Shaft it is transported to the underground workshops for assembly. Due to the process required to bring machinery into the Mine, the majority of machines never leave it.

No 5 Shaft – rock salt elevation.

No 5 Shaft, the last shaft to be installed, was completed in 1973. It is positioned approximately 100m north of No 3 Shaft. The shaft dimensions are similar to 4 Shaft - 4.88m (16ft) in diameter with a concrete lining and an overall depth of 164.5 m. 5 Shaft's primary function is the elevation of the finished rock salt.

No 5 Shaft consists of a winding engine and two cage over skip combination units suspended on ropes, which operate in balance. The skip loading station is located 155m below the surface, with the skip portions being of the bottom-dump type and each having a capacity of 9 tonnes. The rock winding process is completely automatic, although it can be manually controlled when necessary for maintenance, personnel riding or shaft inspections.