

# A Bypass Bridge Design for the Installation of Additional Cells in an Operating Potline

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## Abstract

To add extra cells in an operating potline represents a considerable engineering challenge, for it involves, apart from the installation of the new pots themselves, modifications to the existing conductors as well as tying the new cells to the gas treatment centre. The complexity of such a task is further increased if the selected location for the installation of the new pots lies in the middle of a potroom, involving replacement of an existing set of passageway linkage busbars. Given that existing operational cells cannot be stopped for the duration of the construction work, the usage of a bypass bridge is required. This article describes the joint efforts of an integrated EGA-HATCH-SNC team to increase the metal production of DUBAL Potline 8 by installing two additional reduction cells in the short passageway of each of the two potrooms while operating at full potline current. This was achieved using a dedicated bypass bridge, sized to carry 400 kA and connected to existing pot-to-pot circuits strictly by means of bolted busbar connections. Finally, the commissioning and performance of said bypass bridge is discussed.

**Keywords:** Aluminium electrolysis cells; brownfield potline expansion; bypass busbar bridge; bolted aluminium busbar connections; installation and performance of bypass busbar bridge.