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Development of Low-Z septa for CERN's future FT programme

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The impact of high-flux protons on the inherent beam loss in the slow extraction from SPS towards the North Area has been recently discussed and potential improvements have been proposed. These solutions are mainly aiming to reduce the high component activation and related reduction of lifetime, as well as observed non straightness in the anode body. Recent studies have allowed to demonstrate feasibility of replacing the currently installed stainless steel tank, flanges, and anode body by lowZ materials. The design iteration and material choice has led to the fabrication of a reduced length prototype, demonstrating mechanical, electrical, as well as the vacuum related performance. The results from the full length and prototype design will be compared to the existing system. Furthermore, the optimization of the anode body straightness including results from 3d optical metrology will be discussed.

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