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NEG coating for narrow tubes: challenges in deposition and testing

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One of the main advantages of NEG coating is providing required pressure in UHV/XHV range in vacuum chamber with restricted vacuum conductivity, i.e. vacuum chambers with high aspect ratio (length to characteristic cross section size). The most challenging for NEG coating production is depositing of the tubes with diameters smaller than 20 mm. We have developed and tested a deposition facility for coating 0.5 long tubes with a diameter of 5-10 mm.

Equally challenging was to design a facility to measure pumping speed and capacity of such tubes, as a total pumping capacity is too low. A new pumping properties characterisation facility was built and tested. The results for a sample tubes with various diameters in the range of 5-40 mm will be shown.

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